BUTANE-PROPANE News

Headquarters for L.P. gas Information Since 1931

JUNE 1955

STACK
LPG & the A-Bomb

Selling the Tobacco Load

TECHNOLOGY

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WHAT'S *YOUR* PROBLEM?

SUPPLY? Remember this, TULOMA LP-GAS comes regularly from more than 30 plants and refineries.

DEPENDABILITY? Our huge tank car fleet assures "on time" delivery from supply points strategically located in 12 different states.

QUALITY? Top-quality TULOMA LP-GAS comes to you "on spec," dry and pure, scientifically tested.

SERVICE? Tuloma goes far beyond contract obligations to assist you with intricate technical and marketing problems.

Why not contact Tuloma today!
Write, wire or call . . .

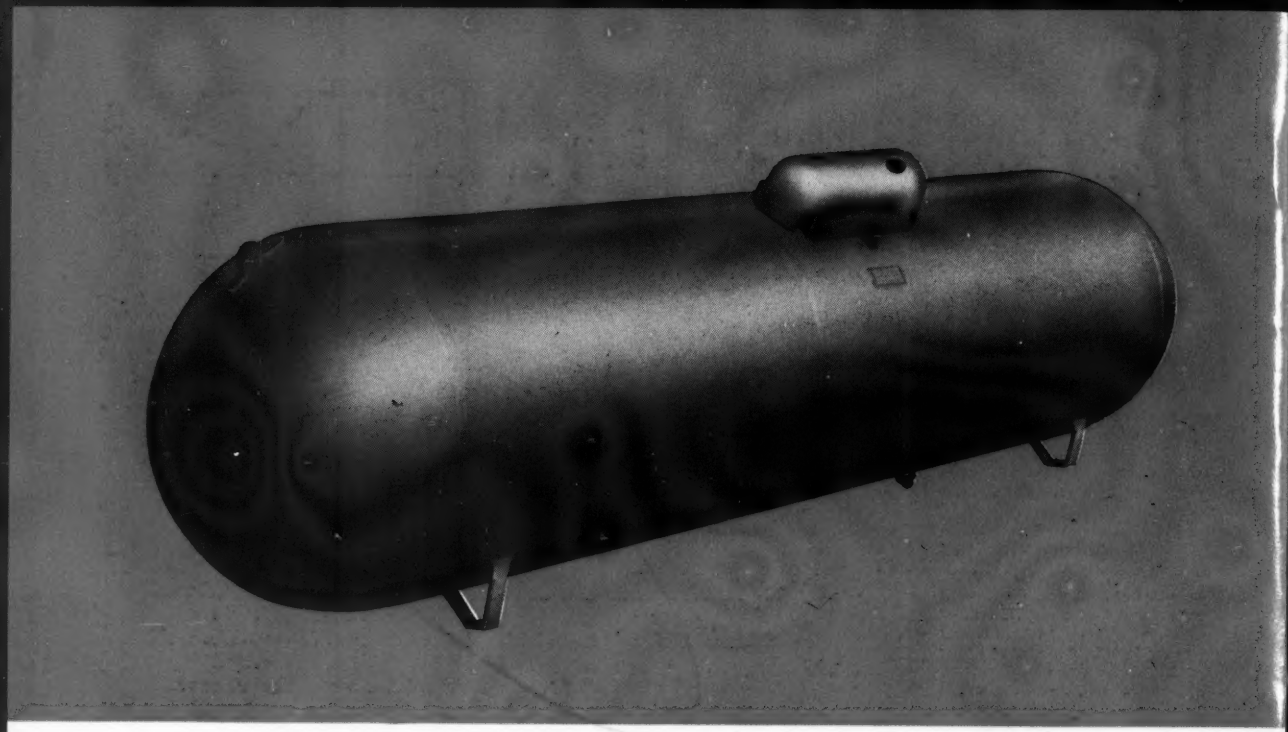
Tuloma LP Gas

MEMBER national LP-GAS PROMOTIONAL program

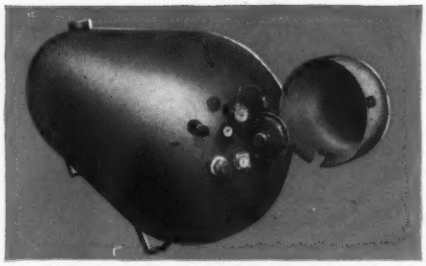
MEMBER LPGA

TULOMA GAS PRODUCTS COMPANY

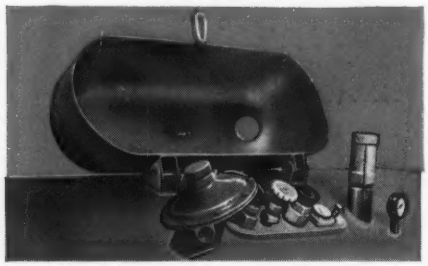
PHONE 2-3261 • BOX 591 • STANOLIND BUILDING • TULSA 2, OKLAHOMA



Service Stops Go Easier, Quicker with Hackney LP-Gas Systems



Your choice—of end-connected systems (shown here) or shoulder-connected systems (shown above) in any size.



Streamlined domes—one-piece construction with no seams where rust can start—extra-heavy for complete valve protection.

Quality fittings always work smoothly...conveniently grouped on shoulder or end of tank for easy servicing...it's no wonder tank truck drivers spend less time per stop at Hackney Systems—make more stops per day.

Additional Reasons for Choosing Hackney Systems...

Ready for use—furnished with all fittings and gauges—all of good quality. Thoroughly cleaned and dried. Painted with a tough, long-lasting coating.

Fully tested and inspected—meet ASME Code and NBFU regulations—listed by UL. Welds are X-ray controlled for soundness and uniformity. Hydrostatically tested.

The size you need—standard capacities of 250, 499, 640, 855, 995, 1135, 1199, 1745, 2550 and 3360 gallons. Other sizes to order.

Send today for additional information.

Pressed Steel Tank Company

Manufacturer of Hackney Products

1487 S. 66th St., Milwaukee 14 • 52 Vanderbilt Avenue, Room 2099, New York 17 • 229 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St. N.W., Room 112, Atlanta 3 • 208 S. LaSalle St., Room 790, Chicago 4 • 570 Roosevelt Bldg., Los Angeles 17 • 18 W. 43rd St., Room 13, Kansas City 11, Mo. • 138 Wallace Ave., Downingtown, Pa.
Downingtown Iron Works, Inc., Division, Downingtown, Pennsylvania

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

Performance Proved on LPG

In The World's Largest Outdoor Liquid Meter Test Laboratory



Engineer calibrates Rockwell "760" meter for measuring liquid propane.

ROCKWELL "760" Liquid Propane Meters

And Complete "Packaged" Dispensing Units

Rockwell "760" meters are now laboratory tested for accuracy and durability on special LPG meter runs in Rockwell's huge new outdoor test station. Actual service conditions are duplicated. LPG is the testing medium. Nothing is left to chance. You know *for sure* that the Rockwell meters and accessory equipment you order for trucks and pump outlets will perform up to specification when installed. It's another good reason why you can rely on Rockwell for all your liquid fuel accounting.

Write for bulletin.



This meter has an outer case of special ductile alloy iron. It meets the safety standards of all state specifications and is listed by Underwriters' Laboratories.

ROCKWELL MANUFACTURING COMPANY **Pittsburgh 8, Pa.**

Atlanta Boston Charlotte Chicago Dallas Houston Los Angeles Midland, Texas N. Kansas City, Mo. New York Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa

Canadian Petroleum & Industrial Meter Sales: Peacock Brothers Limited

BUTANE-PROPANE News

VOLUME 17 • NUMBER 6

Contents

How LPG Survived the A-Bomb Test 29
Harold C. Hood

How to Figure Vapor Savings When Unloading Tank Cars 33
Lawrence Smith

How to Plan Successful Advertising: Part 1 — Four Foundations on Which to Build Sound Advertising 36
A. D. Burroughs

How to Plan Successful Advertising: Part 2 — Where Should the Dealer Spend His Advertising Dollar? 38
A. D. Burroughs

LPG Cures 2 Million Square Yards of Concrete Pavement..... 41
Otis C. Williams Jr.

Steady Heat Makes LPG Ideal for Hudson House Nut Dryer 43
Harold C. Hood

Know Your Industrial Markets: Part 5 — Wherever Metal Working Is Done, There Is a Place for the LPG Torch..... 46
John C. Abram

Washington Bulb Farmer Enthusiastic Over Propane-Fired Bulb Sterilizer 50
Harold C. Hood

South Sees Increased Usage of L.P. Gas for Cotton Cultivation 56
David Brown

The Customer Demanded LPG—So They Started a Gas Company 62
Harold C. Hood

L.P. Gas Is the Best Fuel for Curing Tobacco 65

The Whys and Wherefores of Curing Tobacco With L.P. Gas 66
Frank L. Horne

The Tobacco Farmer Must Be Sold on LPG and Equipment for Curing 74
Carl Abell

Direct-Fired L.P. Gas Kilns Rate High With Plywood Industry 82
Harold C. Hood

La Gloria Butane Speeds Collections by Postpaid Envelopes, Printed Checks 86

Solution to the Problems of Deodorizing Old Cylinders 88

Power

Butane Reduces Operating Overhead for Alice, Texas, Oil Field Hauler 145
Ruel McDaniel

LPG Provides Dependable Refrigeration for United Truck..... 147

DEPARTMENTS

Advertisers Index	154	Letters	21
Associations	98	New Products	90
Beyond the Mains	25	News	124
Calendar	112	Power	143
Classified	152	The Trade	114

BPN

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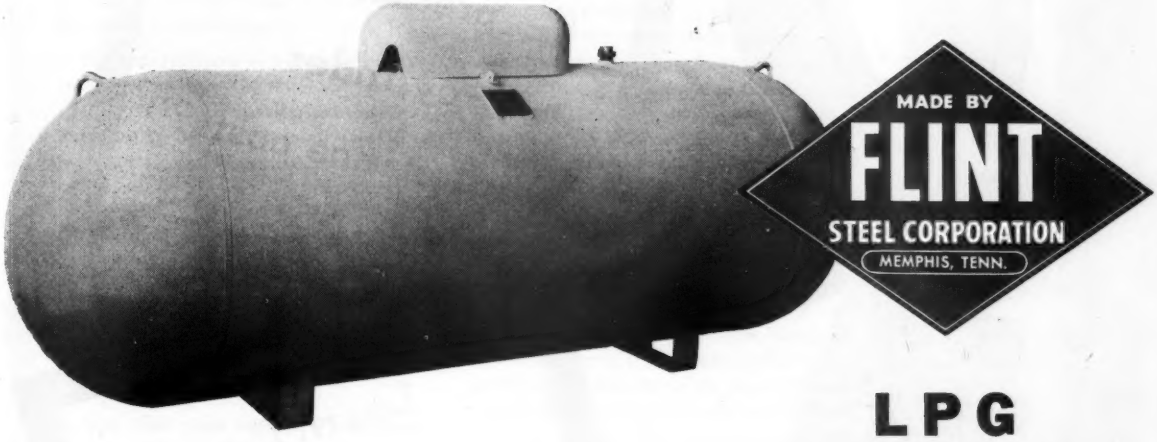
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MANUFACTURING & SUPPLY CO.

presents

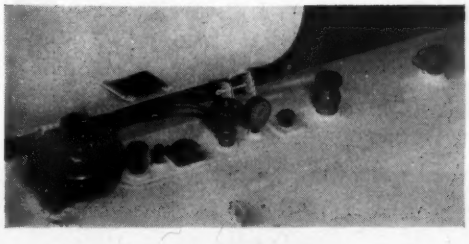
the **Completely New**



LPG SYSTEM

Fabricated in accordance with ASME 1952 code, 250# psi working pressure

New...Brand New...from Legs to Hood!



These Flint LPG tanks are *really* new! New streamlining . . . new individual fittings . . . everything . . . assure you of the best you can buy!

- **Accessible individual Rego Fittings**
- **Gallonage-Type Gauge**
- **One-piece Deep-Drawn Hood**
- **Heavy Lifting Lugs**
- **Extra Heavy Reinforced Legs**
- **UL Approved**

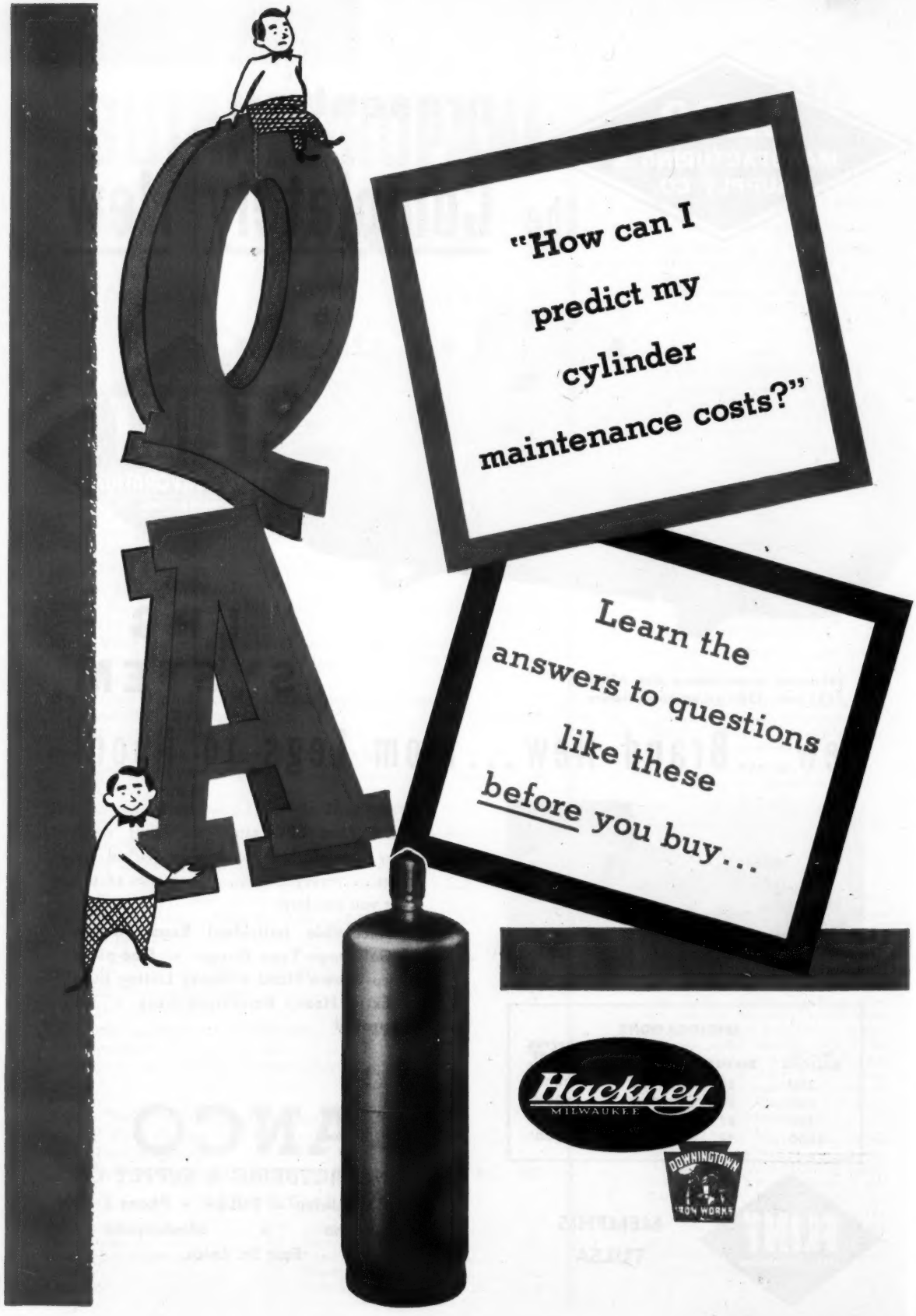
SPECIFICATIONS

WATER GALLONS	DIAMETER	OVERALL LENGTH	SHIPPING WEIGHT (Approx.)
250	30"	92"	700#
330	30"	116"	825#
500	37"	120"	1250#
1000	41"	193"	2550#

FLINT STEEL CORPORATION

MEMPHIS
TULSA

ANCO
MANUFACTURING & SUPPLY CO.
21st & So. Union • TULSA • Phone 2-5241
Omaha • Minneapolis
East St. Louis


Q
A
"How can I predict my cylinder maintenance costs?"
Learn the answers to questions like these before you buy...
Hackney
MILWAUKEE
DOWNINGTOWN
IRON WORKS

Q. How often will the cylinders need repainting?

A. Hackney LP-Gas Cylinders go far longer between repainting because the protective undercoating applied at the factory has been selected for its toughness and durability—is applied to thoroughly cleaned cylinder surfaces, and is baked on.

Q. How much preparation will be needed before each repainting?

A. The wear resistance of the Hackney undercoating means there'll be fewer scratches and scuff marks to clean up—less rust to remove by scraping or wire brushing—less time required to get the cylinders ready for repainting.

Q. How will foot rings stand up?

A. Heavy-duty Hackney foot rings are designed to take normal handling and shipping abuse without damage—are securely welded to the bottom head around the entire circumference.

Q. Are foot rings adequately protected against rust and corrosion?

A. Hackney foot rings have the top edge shaped to fit against the bottom head of the cylinder—a feature which reduces the deep, hard-to-clean crevice at this joint. There's less chance for rust and corrosion to get a start. In addition, the full circumferential weld prevents moisture and dirt from accumulating here, and vent holes allow evaporation of moisture from the area.

Q. How much time will normal routine inspection require?

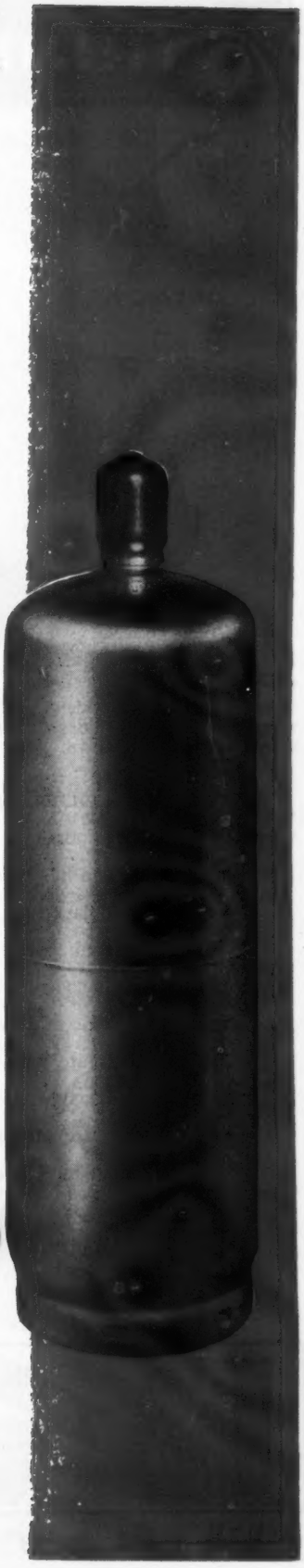
A. Hackney Cylinders can be quickly inspected because service-tested undercoatings and other protective measures reduce the occurrence of pitting, rusting and corroding. Also, the single circumferential seam takes less inspection time than the greater seam area of a three-piece cylinder.

Q. Whose reputation stands behind the cylinder?

A. Hackney LP-Gas Cylinders are manufactured by Pressed Steel Tank Company—specialists in the design and manufacture of pressure vessels and compressed gas cylinders for more than fifty years. Pressed Steel Tank Company has made more LP-Gas cylinders than any other company—has been making various types of compressed gas cylinders continuously since 1905. It's no wonder Hackney Cylinders are preferred throughout the LP-gas industry.



MORE QUESTIONS LIKE THESE **are answered in the 16-page booklet, "See the Whole Picture and Save." Send for a free copy today—and learn all the reasons why the Hackney 100-pound propane capacity cylinder is the most popular cylinder in the entire LP-gas industry.**



PRESSED STEEL TANK COMPANY

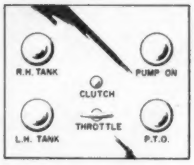
Manufacturer of Hackney Products

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DOWNINGTOWN IRON WORKS, INC., DIVISION
138 Wallace Ave., Downingtown, Pennsylvania

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

TRINITY ENGINEERED...



DETAIL A

NOTE:
Openings in both tanks identical for assembly on either curb or road side delivery. Curb side shown.

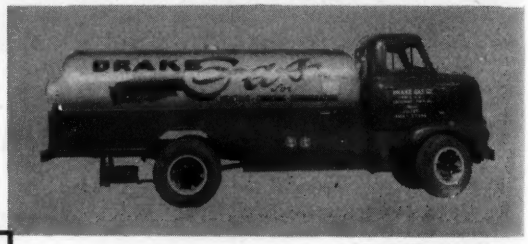
VAPOR
LIQUID

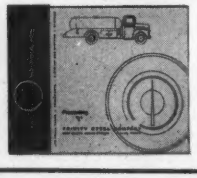
TRINITY MODEL NO. 106 is the outcome of many ideas obtained from the foremost LPG distributors, and has become (in one short year) the most popular truck tank unit available. It solves truck tank problems because it does the job better . . . cuts operating costs and boosts your profits. The No. 106 is engineered to fit your chassis. Tanks are painted with DuPont DuLux white over red oxide with chassis matching skirting. Here you see skillful interior engineering of the No. 106 . . . and you can see the Bonus Profits too, when you operate with a Trinity Truck Tank, the finest you can buy.

TRINITY PROFIT MAKING BLIMPS

NO WASTED WEIGHT with the precision-engineered Tandem Axle "Blimp" Transport. Higher payload profits with no dead weight hauling — X-rayed and stress relieved. Trinity guarantees largest possible loads complying with your state regulations.







the NEW TRINITY STORY

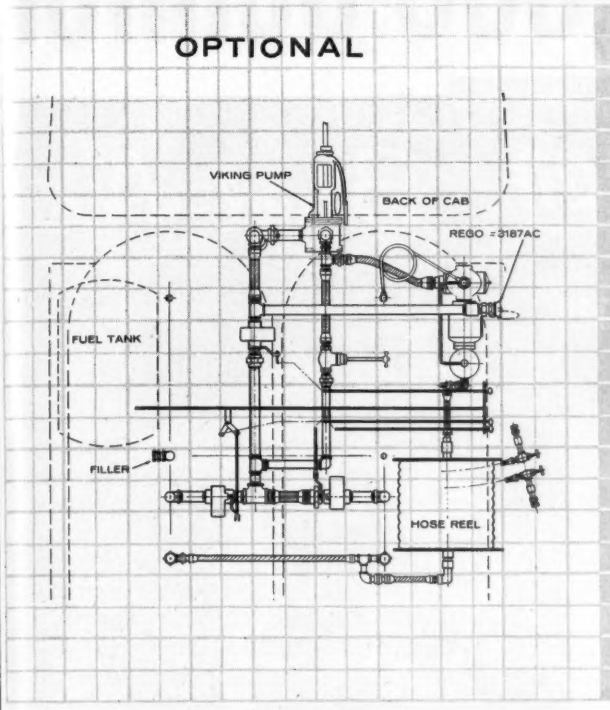
Write today for your beautiful 16-page booklet covering the entire Trinity line of truck tanks, storage tanks and transports.

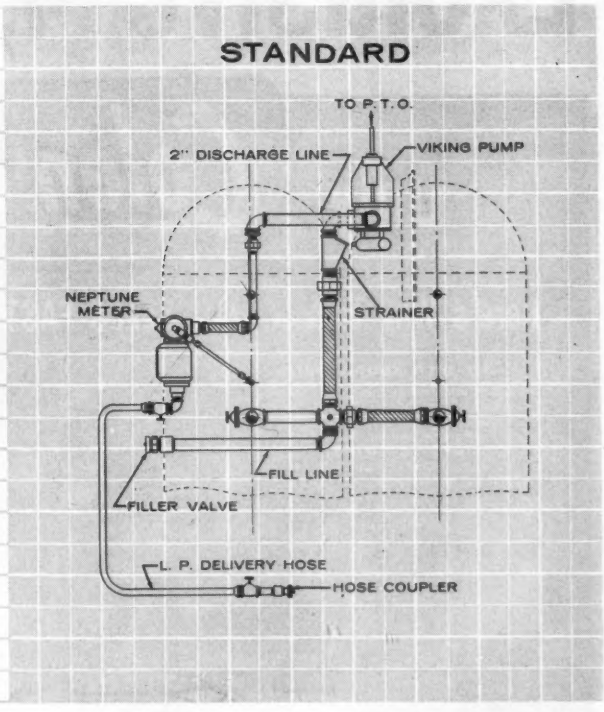
ASK US about financing your new trucks—25% down —24 months at 5% per year.

MEMBER LPGA

3301 SOUTH LAMAR STREET •

All the way through





TRINITY TWIN BARREL MODEL NO. 104

Proven to be the most complete unit available today for the money. Engineered for ruggedness, economy and efficiency to do a better job, cut operating costs and boost your profits. Like all Trinity tanks, No. 104 is constructed with the finest fittings, pipings and connections available.



TRINITY "PAYLOADER" MODEL NO. 100

Twin Barrel model 46" diameter. Advance-engineered with 2450-gallon capacity . . . meets all state axle loading requirements. X-ray and stress relieved for maximum payload.

TRINITY TANK PLUMBING has been precision engineered and carefully constructed for ease of operation, repair and replacement. The simple direct plumbing flow design permits maximum efficiency. Only the finest fittings, pipings and connections are used.

The **TRINITY SPECIAL FEATURES** shown here are only a few of the many that have sold North America's leading LP Gas operators on TRINITY quality.

Beauty of design, utility and economy are built into every Trinity product — with your requirements always in mind.

Whether it be a truck tank, transport, storage tank or the famous Eveready Gas System, Trinity Precision Engineering pays off in Bonus Profits . . . to YOU.

TRINITY ENGINEERING MEANS PRECISION



TRINITY STEEL COMPANY INC.
EVEREADY
GAS SYSTEMS

DALLAS, TEXAS • HUnter 8321

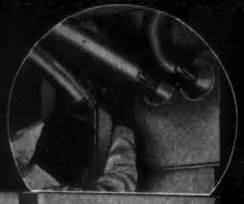
Exclusive $1,000 Comfor

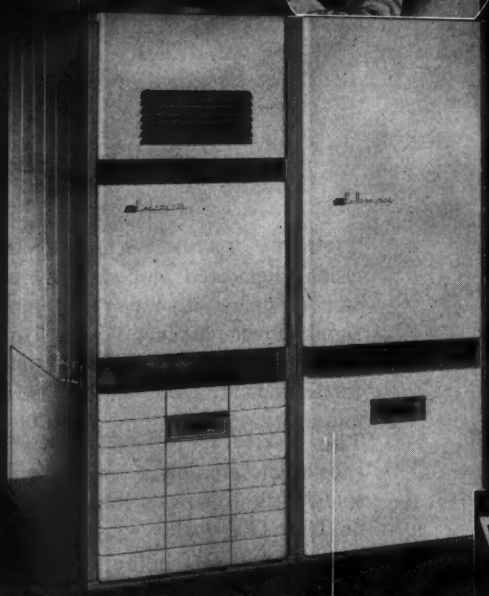
Only Coleman Blend-Air®

Here's Why Blend-Air SELLS FASTER...

3½-Inch Round Ducts

Easily installed anywhere, the Blend-Air ducts and flexible fittings can be installed between studs without costly cutting and alteration. Faster installation in new homes—a real sales clincher for remodeling, especially for replacing hot water or steam radiators.





Blend-Air Furnaces

Install separately or with Blend-Air systems. Complete range of sizes—fit in basement, utility room, closet, alcove, attic or under-floor crawl-space. Blend-Air furnaces may be used with existing systems in older homes, or with conventional systems in new homes.

Blend-Air Cooling

Doubles your sales prospects! Every time you sell Blend-Air heating, you have a ready-made customer for Blend-Air cooling. Uses same 3½-inch ducts as heating or may be used with present forced-air system! Saves up to 97% on water cost—25% on electricity bills.

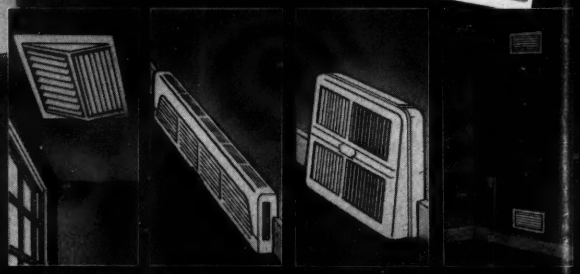
System makes it possible!

In new home or old, sell the system that puts the MOST comfort into your customer's home and lets you *guarantee* it. Blend-Air gives the EVENEST heating ever developed, thanks to Coleman's exclusive "blenders." The entire system is pre-engineered from furnace to blenders, with 3½-inch round ducts that fit between studs. Makes installation faster in new homes, saves costly cutting in old homes! And only Blend-Air lets you guarantee heating comfort, backed by $1,000 bond! Nothing else like it in the industry.

Show your prospects this **$1000 COMFORT BOND**

it's proof they'll get the most comfort from Blend-Air. Builds confidence in you and your company!





HERE'S PROOF Blend-Air can make YOU extra sales and profits

"Blend-Air sales have increased so much I have given up all other lines of heating equipment," says H. L. Pike, Loyd Heating & Air Conditioning Co., Greensboro, N.C. "I feel my customers are selling Blend-Air for me!"

"Coleman has something far advanced in warm air heating," says Ray Tretheway, Port Huron Coleman Co., Port Huron, Mich. "We organized 4 years ago and today have 450 satisfied customers. Blend-Air definitely sells itself!"

EXCLUSIVE Blenders! Never before a way to keep room air so uniform, floor-to-ceiling and wall-to-wall! Gives individual room temperature control! For true perimeter heating and cooling—stops heat or cold at its source. Here's the difference in the exclusive blender system:

Instead of releasing air directly into room, creating objectionable drafts, Blend-Air system forces hot or cool air into the blender at velocity of 1200 feet per minute. This creates a vacuum drawing room air into blending chamber, mixing it with hot or cool air—then releasing it at a comfortable room temperature. Result: Constant and even floor to ceiling circulation. NO drafts, supreme comfort!

Since 1900—makers of the famous Coleman lamps, lanterns, camp sto

Bond Helps You SELL!

How COLEMAN Advertising Helps You SELL with Big FULL PAGE Ads Like This . . .

1 To Home Owners and Future Buyers Month after month, prospects will read about Blend-Air's exclusive features—how easy it is to install in new home or old, and how easy to own on easy FHA or "open end" mortgage financing! Be ready to close these sales!

To Builders—Builders will read how they can guarantee comfort to their prospects when you install Blend-Air heating for them. Recommend Blend-Air on your bids and get extra sales! Ask about "Portfolio of Home Merchandising Ideas for 1955."

2 COLEMAN Helps you "close" these sales with the biggest, hardest-hitting promotion program in its 55-year history! Broadsides, product films, signs, displays, demonstrators, ad mats—so many it takes a whole book to list them all!





another FAST SELLER!

COLEMAN Vit-Rock Gas Water Heater

with "JET RECOVERY" action



Easy to sell because only Coleman puts a solid, patented rock wall between water and metal. Can't rust! And "jet recovery" gives over 200 gal. hot water daily from smallest models!

Backed by 10-Year Warranty and EXCLUSIVE $500 Bond!

put Coleman to work for you, too!

MAIL COUPON TODAY!

The Coleman Company, Inc.

WICHITA, KANSAS

home heating and air conditioning.

Specially Designed for LP-Gas

The Coleman Company, Inc., Dept.
Wichita 1, Kansas

I want to know more about how the Blend-Air System, Blend-Air Furnaces and Air Conditioners can increase my sales. Have your distributor's representative call on me.

Name_____

Firm Name_____

Address_____

Town_____ Zone____ State_____

ALLTROL® CENTER make GAS RANGE



ONLY ALLTROL® BURNERS GIVE THRIFTY MEASURED HEAT

Instant full flame... brings foods to cooking temperature in shortest time.

"Click"... convenient Low Frying heat... provides perfect wide-spread low heat for "most used" frying operations.

"Click"... efficient Center Simmer... maintains boiling in any covered utensil.

"Click"... gentle "Keep-Warm" heat... keeps foods perfect for serving without further cooking.

SIMMER BURNERS SALES SIZZLE

Coast-to-coast the story's always the same—

These 6 Super-Selling Points move more gas ranges for more profit



Only gas ranges with Center Simmer Burners can give these 6 user-benefits. And when you demonstrate these advantages—you, too, will find your range sales shooting upward—fast!

The reason is simple: most people need to be *shown* that *modern* cooking means cooking with gas—on Center Simmer Burners. Demonstrate these 6 main advantages—to prove your gas range is indisputably best, on every count!

Write today for your free copy of "How to Sell More Gas Ranges."

6 benefits your customers buy

- **COOLEST COOKING**—The measured heat of Alltrol Center Simmer Burners keeps kitchens up to 9° cooler. Cooks the food—not the cook!
- **CLEANEST COOKING**—Clear blue flame can't blacken pans . . . and the "just right" heat eliminates messy boil-overs.
- **HANDY KEEP-WARM HEAT**—Tiny pre-set flames keep food and beverages perfect for serving without further cooking!
- **LOW FRYING HEAT**—Convenient "always the same" setting. Perfect for cooking fish, eggs and bacon. Eliminates guessing, peeking under the frying pan.
- **GREATER CONVENIENCE**—No "matching" of pans with burners—use any utensil on any burner! And you can set the right heat by sight or by sound.
- **THRIFTIER COOKING**—Save up to 39% on fuel costs alone! It's an important saving—for 80% of home cooking is done on the top burners.

HARPER-WYMAN COMPANY

Dept. H65-B • 8562 Vincennes Avenue • Chicago 20, Illinois

ORIGINATORS OF CENTER SIMMER BURNERS

ALLTROL® CENTER SIMMER



7100-gallon Capacity — Low Center of Gravity — Correct Balancing

Features:



- **SCIENTIFIC KNOW-HOW**
  Low center of gravity and right wheelbase mean safe efficient economical operation
- **INDIVIDUALLY ENGINEERED**
  Each job is an individual operation using the latest methods. Tailored to meet state requirements and maximum payload
- **REAL CRAFTSMANSHIP**
  No slipshod methods — only trained and skilled mechanics
- **PROPER SUPERVISION**
  Every job is carefully supervised
- **ANY SIZE — ANY STYLE**
  Whatever your needs — on the ground, on skids, on wheels — our Engineering Department is capable of turning out a specific model for a specific use.
- **IT PAYS TO GET THE BEST EQUIPMENT**
  In the long run it is not only service but ECONOMICAL service that counts. DAL-WORTH has established a record for that!

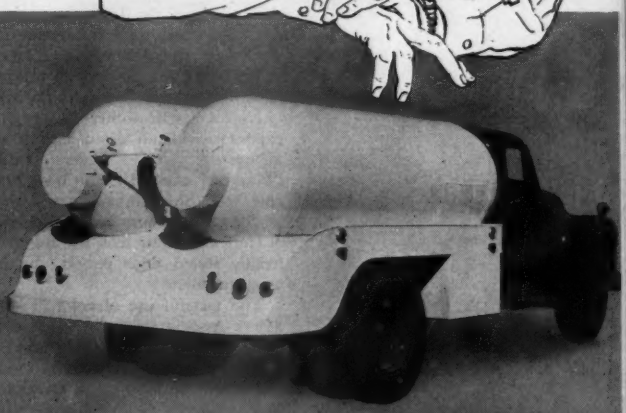
NO Substitute for EXPERIENCE"

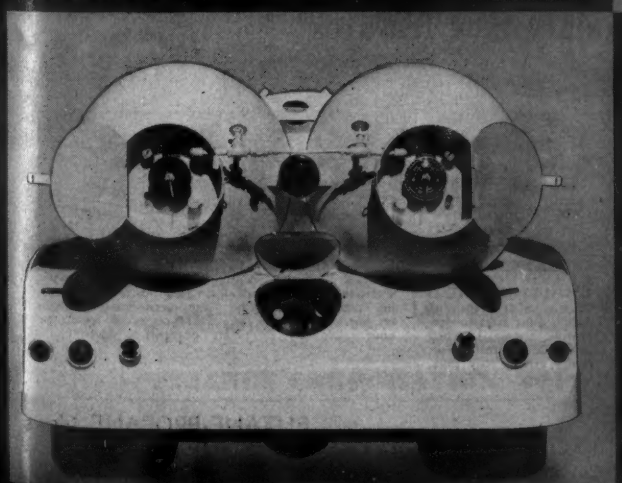
32 Years experience in the manufacture of pressure vessels goes back before the beginning of LP gas in widespread use. We started on the right track, continuing to improve our methods. Our Engineering Department today is qualified to solve whatever problems you may have in propane-butane and anhydrous ammonia tanks and you can have complete confidence knowing that it is backed by *32 years' successful experience.*



Strength, Utility and Smart Flowing Lines are combined in all DAL-WORTH propane-butane and anhydrous ammonia tanks as are evident in this "Twin-700" model.

All equipment on all models is installed to meet any state's Standard of Specifications, the ASME Code, and National Board inspection.





DAL-WORTH TANK COMPANY

W. G. (Red) BRUMIT, Owner

BOX 818

GRAND PRAIRIE, TEXAS

introducing the

new ranges by

Caloric

all-new, colorful, brilliantly designed

All-new from top to bottom, the fabulous new Caloric gas ranges are the most exciting, desirable and saleable in more than half a century of Caloric progress. And they offer dealers the greatest opportunity for substantial profits.

These sensational ranges represent a revolutionary new concept . . . maximum cooking capacity in minimum over-all dimensions.

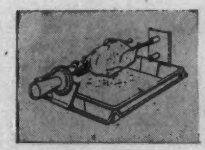
Here's new flexibility. In just three basic sizes 24", 36", and 40", the new Caloric ranges provide an almost infinite variety of combinations. The housewife can choose an oven to suit her needs . . . either 13" "Pastry" oven, 16" full-size oven, or 20" "Harvest" oven. She can have two ovens in one range or a high-level broiler with rotisserie. She can have automatic controls, oven indicator light, "matchless" performance, four burners or six, divided or cluster top-burner arrangement.

Here's the new look in ranges. With new backguard, new angled control panel, freshly styled door panels, the new Caloric ranges have a distinctive and unusual profile.

The tasteful use of color . . . the brilliant years-ahead styling of Peter Müller-Munk Associates . . . the great new features . . . the sturdy long-lived construction . . . all these add up to one thing: You'll be years ahead with Caloric!

For complete information, contact your Caloric representative or write direct to Caloric Appliance Corporation, Topton, Pa.

with these revolutionary new features



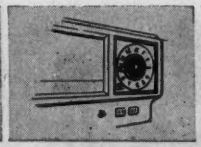
ROTO-RAY BARBEQUER . . . This new rotisserie gives barbecue broiling in your own home. No expensive extra equipment. Motor-driven spit turns meat slowly and smoothly



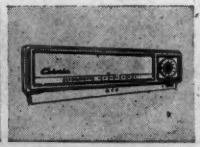
ULTRA-RAY HI-BROILER . . . The high-level broiler that eliminates unnecessary stooping. It's the ultimate in quick, radiant, infra-red cooking.



TWO OVENS . . . A modern Caloric kitchen convenience, the two-oven range is a real "must" for many housewives.



INDIRECT BACK-GUARD COLORED LIGHTING . . . Dramatic color effects to match your kitchen decorating scheme. Lighting available in frosty blue, minty green, rosy pink, cool white.



IN-A-LINE TIMER . . . Vertical marker shows at a glance how much cooking time remains. Can be set for a minute or an hour.



ANGLED CONTROL PANEL . . . Easier to see, easier to use. And the modern control knobs are recessed, can't be bumped or jogged.

fabulous



PALM SPRINGS

New 40″ range. Shown here with automatic oven timer, extra-large "Harvest" oven, and Roto-Ray Barbequer. Model CPW A4AX.



SEA ISLE

w 24″ range. Shown here with omatic oven timer, 20″ "Har-" oven and full-size broiler. del CP A2AX.



WHITE SANDS

New 36″ range. Shown here with automatic oven timer. Two ovens: full-size oven and "Pastry" oven. Model CPD A3AX.

u'll be years ahead with
great new Caloric Ranges

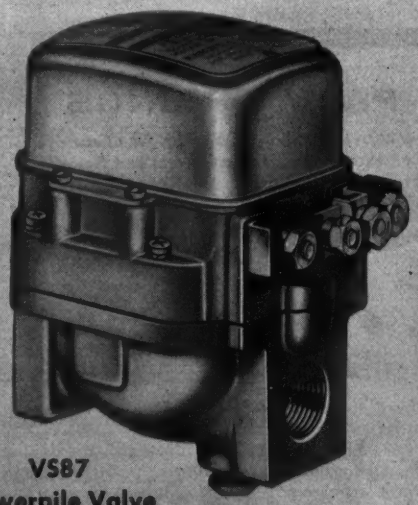
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LORIC APPLIANCE CORPORATION, TOPTON, PA.

Caloric Appliance Corp.
Dept BP
Topton, Pa.
I would like information on your new 1955 master line o fine ranges.
Name_____
Address_____
City_____Zone____State_____

Completely independent! Extremely compact! Fits any gas unit! Minimizes service!

Honeywell self-powered*



VS87
Powerpile Valve

One model fits every job!

Every Powerpile valve is suitable for all gases. Improved wiring terminals simplify installation and service, assure tight, low-resistance connections.

Valve port clogging practically eliminated. The more powerful relay makes possible larger actuator porting.

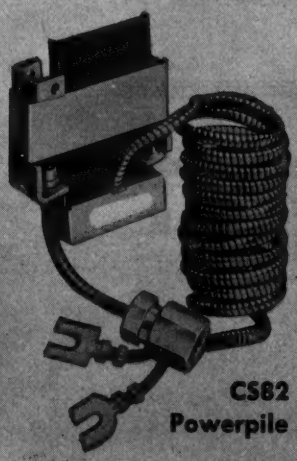
A valve size for every appliance makes system especially suited for large or small appliances. Pictured, at left, the ⅜" or ½" small model. Available in sizes up through 1".

More power, less gas!

A universal pilot for all street gases. For L.P. gases only the orifice changes.

Blue flame pilot uses no primary air, yet provides 40% more power with half as much gas. No primary air adjustments to worry about.

One pilot burner tip eliminates need for stocking wide variety of burner tips. Eliminates plugged ignition ports or carry around slots. Provides positive ignition for practically all standard burner applications.



CS82
Powerpile Pilot

These thermostats also available in Powerpile Package



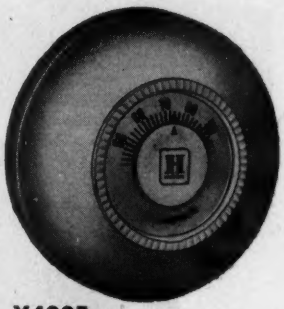
Y400A
TS827 Thermostat has a mercury switch, and extra convenience features to provide for economical control of the heating system.



Y400C
TM801 Time-O-Stat works like an alarm clock —automatically turns up the heat each morning.

*Powerpile package

The only completely packaged control system that meets all your home gas-heat needs!



Y400E
Honeywell Round

World's most modern thermostat! New Honeywell Round TS-86 has mercury switch, and a built-in heat "cycler" to smooth out temperature fluctuations. Cover snaps off so it can be painted to match modern wall colors and interiors.

The revolutionary Y-400 Powerpile System is a completely packaged gas-heat control system including: gas valve, automatic pilot, and thermostat. The package is so complete that even the thermostat cable and necessary staples are included! And a wide range of thermostats is available. This package is ideally suited to provide completely automatic control for room heaters, central warm air furnaces, boilers, floor furnaces, conversion burners, or recessed heaters. And its universal design lets it operate on any type of gas, reduces the need for servicing, simplifies installation, and minimizes stocking and handling problems.

A complete price range. A model to fit every installation.
New features for upgrading and modernizing.

Uses less gas. Revolutionary new pilot uses less than half as much gas as other pilots.

Practically eliminates clogging and resulting nuisance service calls. The valve has larger ports than any other domestic diaphragm valve.

Completely silent system. New design eliminates hissing or sputtering pilots and valves that go "whap" in the night. Both valve and pilot are absolutely quiet.

Lint-proof pilot. The pilot, requiring no primary air, is lint proof, yet requires no lint screens or special adjustments.

Wide range of thermostats. A wide range of thermostats can be used with these systems. You can satisfy any customer's request.

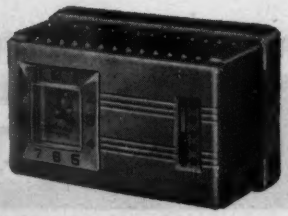
Unexcelled thermostat performance. The various thermostats give performance comparable to that of any 24-volt system.

*Trademark

MINNEAPOLIS
Honeywell

First in Controls

The Honeywell Powerpile System is accepted and approved by all national and local testing laboratories.



Y400D
TM850 Chronotherm has the famous electric clock that automatically turns the heat down at night . . . and raises it again in the morning when you rise.

112 OFFICES ACROSS THE NATION

For complete information on the new Honeywell Powerpile Packages, and on the complete line of Honeywell Controls, call your local Honeywell office or write Honeywell, Dept. BN-6-60, Minneapolis 8, Minnesota.

KEEP YOUR LP-G BUSINESS YEAR 'ROUND WITH Nor-Tex

Make It Easy and Convenient for Your Customers TO BUY AND USE LP-GAS



Nor-Tex "PONIES" (strategically placed for best distribution) can substantially boost year 'round sales and quotas. Operate them yourself or arrange with highway service stations to dispense LP-Gas for you. Nor-Tex portable "PONIES" can be easily placed on farms, ranches, in truck and bus terminals and "on-the-job" for contractors and utility companies. Nor-Tex "PONIES" are the result of many years experience and painstaking efforts by men in the bulk plant phase of the industry, thoroughly familiar with the actual filling of fuel tanks, bottles, etc. Each "PONY" is carefully tested for the efficient, safe, trouble-free dispensing of LP-Gas. Note the large cabinet with its convenient arrangement of fittings and ample meter room. Nor-Tex "PONIES" meet all requirements — U-69 — W250 Codes. Sizes: 500, 700, 1000, 2000, 3000 and 4000 WG. Can be equipped with your choice of popular pumps, meters and accessories.

Selling Profitable Tractor Conversions Is A Real Customer Service



Conversion business is booming! Users report up to 60% savings on fuel . . . Oil consumption reduced to 80% . . . Engine wear reduced 75% . . . 2 to 1 engine life ratio . . . Oil dilution and carbon deposits eliminated . . . Repairs slight . . . Replacement of parts practically nil! TELL these advantages of LP-Gas in Internal Combustion Engines and you'll SELL conversions of all types of mobile and stationary equipment.

WE ARE AUTHORIZED TRUCK DISTRIBUTORS

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Nor-Tex PRODUCTS COMPANY

National Sales Agents for

PREPARE NOW to serve this Rich LP-G Market!

There are Nor-Tex Conversion Fuel Tanks now in use on trucks, busses, cabs, pleasure and business vehicles, tractors and farm machinery, pumps, construction and earth moving equipment, materials handling equipment, pipelines and drilling equipment . . . in fact on all types of Internal Combustion Engines. You can buy custom-built Nor-Tex fuel tanks at "production line prices," complete with mounting brackets and fittings. Just bolt it on and connect it up.

BALANCE YOUR LOAD THE

NORTH TEXAS

IN PROFITABLE BALANCE
Specially DESIGNED UNITS

LOWER OPERATING COST

HIGHER EARNING ABILITY

LOWER DELIVERY PRICE

For value . . . the Nor-Tex Standard Twin "Package Unit" can't be beat! Low delivery price includes features not found in any other combination. It's plumbed, perfectly balanced and comes complete with Recessed Fuel Tank and Viking KK 200 Pump with Mechanical Seal plus 50' Filler Hose, ICC Lights and Power Take-off with Spline Jack Shaft. The finish is Aluminum Paint over Red Oxide. Immediate delivery on completely equipped units — ready to go — 1250 WG to 1800 WG. Your choice of new 1955 Reo, Ford, Chevrolet, International or GMC trucks.

Every Unit Priced Completely Equipped and Ready to Go . . . Excise Tax Paid.



POPULAR NOR-TEX STAR Domestic Tanks

Immediate delivery on one or truck load lots. Every custom designed Nor-Tex Star is fabricated to rigid specifications and double tested. They exceed national, state and local requirements. Each tank is smoothly finished and aluminum painted over red oxide. These are the safest, finest quality tanks you can buy.

250 WG	$128.00
500 WG	200.00
1000 WG	342.00



Manufacturers of Fine LPG Equipment

NOTE: All Nor-Tex Star Domestic Tanks of 500 WG or more include a convenient liquid line outlet for wet line connection to tractor fuel tank.

MONEY BACK GUARANTEE

Time Saving FARM CART

Spots Your Fuel Where You Need It

This well-baffled Nor-Tex Scout is easy to "spot" with car, truck or tractor. Complete with recessed relief valve, 12½' delivery hose, ¾" OIC valve and hose coupling. Mounted on a heavy duty axle with standard Chevrolet hub and 15" wheels.

300 WG
NOR-TEX
SCOUT



$250.00
LESS TIRES

Completely Safe!

NOR-TEX WAY — FINANCE THE BALANCE

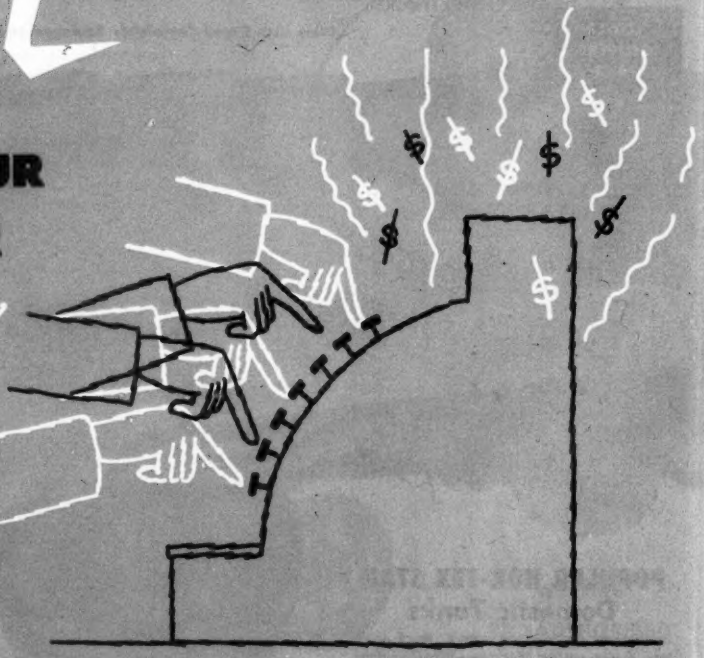
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P. O. BOX 1219
DENTON, TEXAS
CENTRAL 5416

Warrengas for the Concentrated Fuel

FARM TRACTORS
IRRIGATION ENGINES
CROP DRYING
TOBACCO CURING

WILL KEEP YOUR
CASH REGISTER
"HOT"
THIS SUMMER!



Let us help you develop this business . . .

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WARREN PETROLEUM CORPORATION • Tulsa, Oklahoma

LETTERS



Melting Iron and Steel

British Columbia

Can you give me any information regarding the possibilities of using butane or propane as fuel to melt iron and steel in a foundry?

R.T.G.

We do not have any knowledge of L. P. gas being used, or having been, in a foundry for melting iron and steel. It can be used as well as any other gaseous fuel such as coke oven gas, manufactured city gas, or natural gas, if the air for combustion is preheated. This is necessary in order to provide sufficient temperature for melting the steel. It is necessary to preheat the air for any fuel used if the process is to be economical and fast.

There are many other places in an iron foundry where L. P. gas can be used to advantage and economically. Some of these are warming ladles, drying molds, drying sand, annealing castings and other similar jobs. Due to the ease of transmission, simplicity of burners and ease of close control, it can prove itself the economical fuel to use.—Ed.

•

Filling Small Cylinders

California

Could you please clarify the question of filling cylinders which do not have a liquid level gauge (5-gal. capacity)? We have been informed that it is illegal.

F.B.

The filling of all propane cylinders in California is covered by the Liquefied Petroleum Gas Safety Orders issued by the Department of Industrial Safety.

ICC cylinders approved for use with propane and not equipped with a liquid level gauge may be legally filled in this state. They must be filled by weight, and at least 10 ft from any source of ignition. This requires that the cylinders shall be disconnected, removed from the trailer hitch, and placed on scales for filling.

The reason for this requirement is that in filling the cylinder there must be a certain amount of "outage space" (vapor space above the liquid) to permit expansion of the liquid propane due to rise in temperature, without forcing liquid out through the pressure relief valve. Such escape of liquid fuel would produce the hazard of fire or, under some conditions, of explosion. Obviously, without a liquid level gauge the only way to know when the liquid reaches the maximum permissible level is to weigh it in.

Regulations for filling trailer cylinders vary in the different states. Some allow those equipped with liquid level gauges to be filled on the hitch. Others require that all cylinders be taken to a properly designed and approved plant for filling. We believe that the latter is the safest procedure, because if human error or just plain carelessness does result in an accident it will not happen where it will affect the persons or living quarters of people living in the trailer park. Obviously not everyone shares that viewpoint.

We suggest that you obtain a copy of the Safety Orders mentioned above from the State Printing division, Documents Section, 11th and Oak St., Sacramento 14. The price is 26 cents.—Ed.

•

Underground Use

Illinois

A customer of ours, a mining company, is using stripped trucks converted from gasoline to diesel for transporting ore underground. It is necessary for them to use scrubbing tanks to remove carbon monoxide from the exhaust to meet state safety requirements.

It would be cheaper to convert the truck motors to propane instead of exchanging the entire motor for a diesel engine and they are interested in using propane for fuel. I would like to know if any units are used elsewhere for a similar purpose. Since these trucks are never aboveground, what type of portable fuel tanks would you recommend?

K.B.

We have only one report of the use of LPG-powered equipment underground in operations such as you describe. Back about 1938 the Los Angeles Metropolitan Water District used LPG powered engines to haul out the excavated material in the construction of some of the tunnels in the Los Angeles aqueduct system. Their purpose in doing so was to eliminate fumes which were bothering the workmen and the operation was reported to have been quite satisfactory.

Recently there has been quite a bit of activity in converting gasoline lift trucks used in factories and warehouses to propane operation for the reduction of fumes as well as to accomplish operating economy. Since this is indoor operation, the conditions would not be too different from those in the mining operation which you have in mind at present. (There have been several articles in Butane-Propane News recently about the conversion of fork lift trucks from gasoline to L.P. gas, among them a series of three articles by Editor Carl Abell in the January, February, and March, 1955, issues.)

A showing on reduction of carbon monoxide content is typical of experience in other parts of the country. Portable fuel tanks for this type of service are available in three sizes holding approximately 5, 7, and 10 gal. These may be obtained for use in either vertical or horizontal position and they should always be installed, stored, and transported in the exact position for which they are designed.—Ed.

•

Effect of Elevation

Nevada

We wish to clarify several questions in regard to propane-fired water heaters at an elevation of 5140 ft.

The water heaters in question have two mushroom-type, cast iron burners with 30 ports drilled No. 31 drill. The heat input rating (normal sea level) is 32,500 Btu per hour.

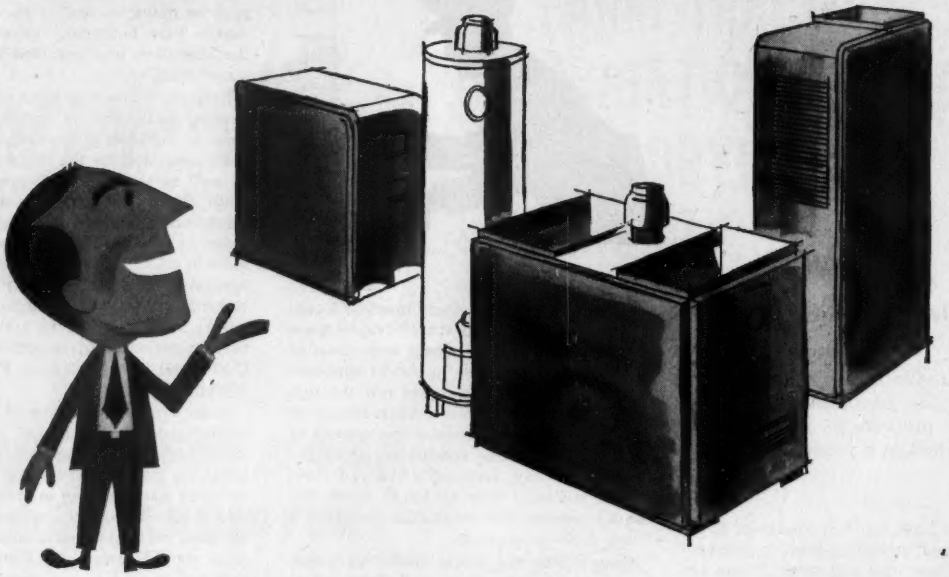
Are we correct in the following calculations: Input rating at 5140 ft elevation=25,818 Btu/hr. The heating value at 5140 ft elevation=2100 Btu/cu ft, when the value of 2550 Btu/cu ft is based on atmospheric pressure of 30-in. mercury column and the pressure is reduced approximately 1 in. per 1000 ft elevation. Input per orifice=12,908 Btu/hr, orifice size No. 56 drill.

Are the drill numbers in ports and orifices correct sizes at this particular elevation and atmospheric pressure?

E.T.R.

The American Gas Association states as follows regarding gas appliances used at high elevations: "For elevations above 2000 ft, ratings should be reduced at the rate of 4% for each 1000 ft above sea level." Therefore, gas appliances installed at an elevation of 5000 ft should have their input rating reduced 20%; 32,500 x .8=26,000,

Sell the most complete line!



Furnaces, boilers, air conditioners—space, water and unit heaters! For every purpose, every purse—from one source. BRYANT, of course!



be "Mr. B"

(AUTHORIZED BRYANT HOME COMFORT DEALER)

Only "Mr. B"—the Bryant Home Comfort Dealer—has *all 8* of these selling assets to build his business BIG:

1. A name customers know and want
2. The most complete line of automatic heating, air conditioning, water heating
3. Quality equipment for every market
4. Exceptional distributor service
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For bigger profits now, for a secure and prosperous future—see your Bryant Distributor. Ask him about Bryant's big "Mr. B" action program, and how it can make sales and money for you!

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AUTOMATIC HEATING
AIR CONDITIONING
WATER HEATING



the approximate input rating for 5000-ft elevation.

It appears you have calculated the full 5140-ft elevation which accounts for your figure of 25,818. The orifice size cannot be sized that accurately so the approximate figure is satisfactory. Also, an approved appliance is designed and tested to take some over-rating.

However, the area of the orifice is not reduced 20% to obtain the 20% reduction in rating. The altitude itself will cause the appliance to derate itself because of the expansion of the gas. This you have discovered or sensed by your reference to the lower heating value of the cubic foot of gas when measured at the higher elevation.

If the atmospheric pressure at sea level is 14.69 lb per sq in. absolute or 29.92 in. of mercury (you used 30 in.), then the barometric pressure at 5000 ft is 12.22 lb per sq in., or 24.89 in. of mercury which is almost exactly 1 in. of mercury per 1000 ft of elevation as you have stated. If it is desired to be that exact, the barometric reading for 5140 ft elevation would be 24.76 in. mercury. Then 2550 x 24.76/29.92=2105 Btu per cu ft of gas measured at an elevation of 5140 ft above sea level and 60° F. (Your 2100 Btu is as correct as our 2105.)

The drill numbers in the burner ports are satisfactory, but the No. 56 orifice may be a little bit large and will provide an input rate to the burner in excess of that recommended by the American Gas Association. This, of course, is based on the presumption that the manufacturer installed an orifice for sea level operation. It may be that the No. 56 orifice is proper for that 5000-ft elevation.—Ed.

•

Not Compressor's Fault

Aruba, N. W. I.

We have a Brunner compressor Model LPG-5. The purpose for which we bought this compressor is to drain out gas from the ordinary 100-lb cylinder with one opening with POL valve installed into a storage tank. By no means have we succeeded in a similar operation.

When the residual vapor in the cylinder is drawn out by the compressor the remaining liquid in the cylinder freezes up. When we allow the liquid to flow through the compressor—this is done by turning the cylinder upside down—this freezing action continues all through the surge tank and finally freezes the compressor head to a stop.

We would appreciate information or drawing showing how to empty the cylinder using the Brunner compressor.

E.O.L.

The sketch below (Fig. 1) shows schematically an arrangement for removing liquid and vapor from cylinders with an L.P. gas compressor.

To operate, connect the cylinder in the inverted position and open the appropriate valves so that vapor can be withdrawn from the storage vessel, compressed and forced into the inverted cylinder. This will require that the valve marked "2" be open and the one marked "1" be closed. When the pressure in the cylinder has been increased until it is 20 to 30 lb above the storage tank pressure, stop the compressor, close valve No. 2 and open valve No. 1. The liquid will be forced from the cylinder to storage.

It may be necessary to repeat the pressuring in the inverted cylinder to get all the liquid forced out. Experience will soon determine what pressure is needed and if it is necessary to repeat the pressuring.

When the liquid is all out of the cylinder, close valve No. 1, open valve No. 2, reverse setting of the four-way valve on the compressor so that the compressor will withdraw vapor from the cylinder and pump it into the storage.

Cylinders can be filled by the same method, except that the procedure is reversed and no check valve is used in the liquid line.

A three-way, three-port valve with ports arranged for positioning, as shown in Fig. 2, can be installed in place of the two globe valves shown in Fig. 1.

Position No. 1 is used when cylinders are being changed as it shuts off flow between cylinders and other lines.

Position No. 2 is used when moving vapor to or from the cylinder.

Position No. 3 is used when moving liquid to or from the cylinder.

Concerning the statements about your experience with the freezing: actually, in drawing off vapor with the cylinder in the upright position and liquid in the cylinder, the reduction in vapor pressure causes the liquid to boil rapidly. This requires heat and the only source is from the atmosphere. The heat from the atmosphere cannot enter the tank and liquid fast enough so the liquid furnishes some of the heat and cools down until eventually it is all boiled to vapor or it reaches a temperature equal to or below its boiling point. (N-butane 32° F above zero, propane 44° F below zero.) This is well below the freezing point of water so moisture in the air (even in desert climates) condenses on the outside of the container and freezes. The liquid inside does not freeze.

The same thing occurs when the cylinder is inverted and liquid is drawn into the suction tank of the compressor. Eventually the suction tank may completely fill with liquid and the liquid will enter the cylinders of the compressor and cause serious damage.—Ed.

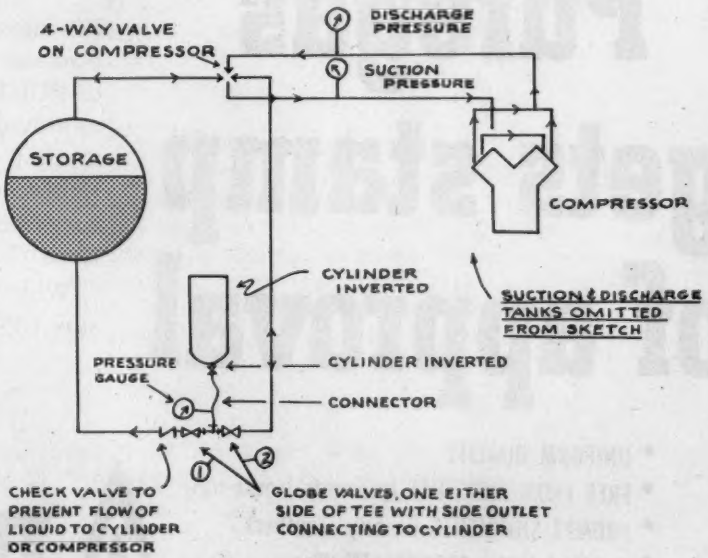


Fig. 1.

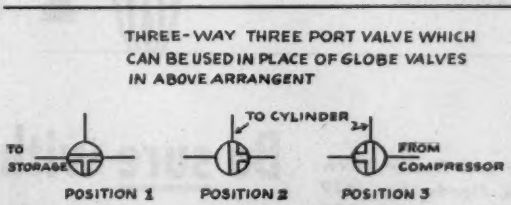


Fig. 2.



Puregas gets stamp of approval

Whenever a liquefied petroleum gas tank car or transport takes on a load of PUREGAS it gets Pure's stamp of approval. It means that the LP-Gas in that car or transport has passed rigid specifications. It means it's moisture free . . . exceeds NGAA specifications . . . and is of a uniform quality.

Why not give your customers the *sure* LP-Gas? Give them PUREGAS!

- UNIFORM QUALITY
- FREE FROM MOISTURE (prevents freeze-ups)
- PROMPT SHIPMENTS (in any weather)
- EXCEEDS NGAA SPECIFICATIONS
- DEPENDABLE PRODUCTION

Puregas

Be sure with Pure

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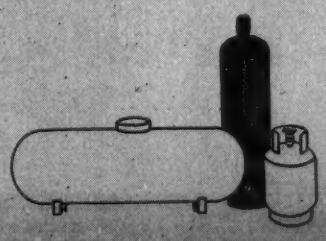
BPN Beyond the Mains

WE HEREWITH GIVE CREDIT TO THE LPGA for its favorable action in referring the matter of establishing a power fuel activity within the association to the organizational committee for study and recommendation. The question now appears to be one of coordination.

Certain existing committees are at present functioning on essential elements of the power fuel program. For example, straightening out the hodge-podge of state laws, regulations, and tax procedures is a major problem which has for some time been receiving attention from the legislative committee. The compilation and publication of a service station directory, authorized by the board of directors during the Chicago convention, is already assigned to another committee.

BOTH OF THESE PROJECTS ARE ESSENTIAL TO A BALANCED MOTOR FUEL PROGRAM, but neither gets to the heart of the problem, which is to provide stimulus and help in increasing summer consumption in power equipment on farms. Highway use is year-round use. Only those activities which result in consumption of fuel during the warm months can establish the needed seasonal balance, and permit more extensive development of domestic heating.

We have our own ideas regarding the power fuel activity which should be developed by the association. Our suggestions will be published in the near future. They will be just that -- suggestions -- based on a desire to help the industry. We know that our suggestions will be considered strictly on their merits, along with those of other groups who have a stake in balancing the seasonal load.



Continued . . .

We cannot possibly know all the answers. The committee needs help from you. It must study and define the problem, and divide the elements into what the national association can do, and what the state associations and other local groups must do to build an effective program. Most of the real work must be done at the grassroots. Only planning, guidance,and coordination can be supplied from the top. The planners must understand your needs in order to build a program that will meet them. Will you see that your ideas reach the LPGA? (Address communications to 11 S. LaSalle St., Chicago 11.)

THE INSURANCE SITUATION IS IMPROVING RAPIDLY. Lowering of rates is reported from several states. Insurance carriers are showing unprecedented interest in the L.P. gas field. Good operators are finding better coverage easier to get -- and easier to pay for.

Several factors have contributed to this improvement, but the most important of these is that the industry has made itself more insurable. Safety consciousness and active effort toward the prevention of accidents are having their effect. Without this industry drive to lower insurance losses -- and to prove the lessened risks -- all the other factors put together would not have been sufficient to make the present gains.

Gentlemen, you did it yourselves, and we congratulate you. And may we take an honest measure of pride in the help we gave the industry by providing the continuing safety program which we published in 1953 and 1954?

The present safety status of the industry may be maintained and even improved. Let's remember that maintaining safety in operations like LPG is never finished. Let's "think safe, be safe, and stay safe."

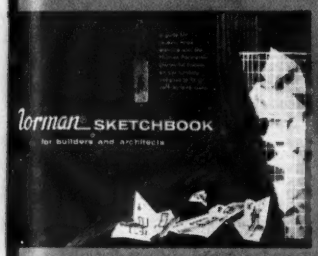
Earl Abell



some people

get ideas

from the Norman Sketchbook!



Norman heating dealers pass on helpful suggestions to homeowners for remodeling; make 'up-grade' selling easier with the Norman Southerner

Someday, she'll move. Right now, she'd rather stay where she is. So how are you going to sell her on replacing her old furnace with a compact Norman Southerner. You've been using the Norman Sketchbook to sell new home buyers on the space-saving convenience of the Norman Southerner. Why not demonstrate the Norman Sketchbook to heating prospects who want their present home to be a little more comfortable to live in?

Use the Norman Sketchbook to sell her on replacing outdated heating equipment with the Norman Southerner. Each page of the Norman Sketchbook illustrates a different home, together with a sketch of the floor plan and cut-away drawings showing the complete heating installation. Chances are, you'll be able to show her a home that's very similar to the one she's living in right now.

What wouldn't she give to have all this space, the extra closet, the convenience of more room for living! No reason why she can't. Not after you explain how the Norman Southerner will let her plan her "new" remodeled home with a feeling of more space, with the interior arranged for greater living comfort and convenience. If you haven't already received your copy of the Norman Sketchbook, write or call. Might as well get your share of that replacement market right away!

If you ever find your prospect in a spot like this, better leave your Norman Sketchbook and beat a hasty retreat. We'll send you an extra copy for your trouble!



NEW LOCAL ADVERTISING PACKAGE

Another big promotion for Norman heating dealers. A complete package of advertising and sales promotion material . . . including local newspaper advertising mats. Send for your free copy today!

The **Norman Southerner**

HORIZONTAL FORCED-A GAS FURNACE



Norman **PRODUCTS COMPANY** • 1150 Chesapeake Avenue Columbus 12, Ohio

Manufacturers of a Complete line of Gas Heating and Air Conditioning Equipment.



Performance-- Value...

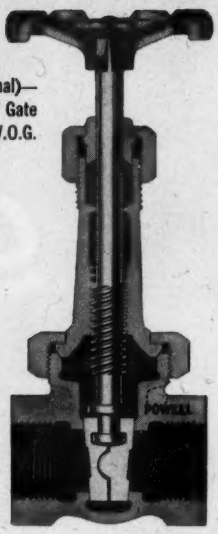


FIG. 8375 (Sectional)—
Bronze "L.P.G." Gate
Valve For 400 Pounds W.O.G.

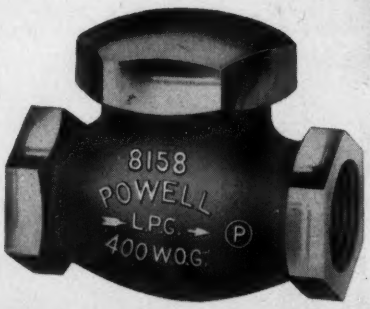


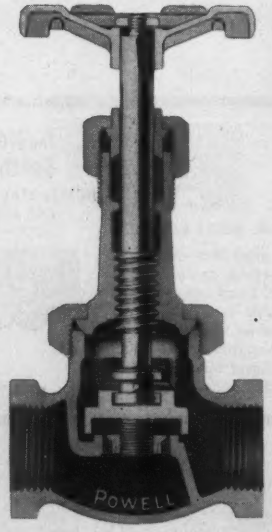
FIG. 8158*—Bronze
Horizontal Lift Check Valve
For 400 Pounds W.O.G.

. . . POWELL VALVES . . . THE COMPLETE QUALITY LINE . . . POWELL VALVES . . .



FIG. 8151*—Bronze
"L.P.G." Angle Valve
For 400 Pounds W.O.G.

FIG. 8150* (Sectional)—
Bronze "L.P.G." Globe
Valve For 400 Pounds W.O.G.



Powell Valves

FOR HANDLING LP GAS

You can depend on outstanding *performance* from every valve made by The Wm. Powell Company, for Powell Valves have a proven record of long life and dependable service.

And Powell Valves give you better *value!* They're precision made and incorporate many quality features—features that can save you money and give you lasting flow control.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our *COMPLETE quality line*, and help solve any flow control problem you may have.

*Underwriter approved

The Wm. Powell Company, Cincinnati 22, Ohio . . . . . 109th year



BPN staff report

How L. P. Gas Survived the A-Bomb Test

By Harold C. Hood
Field Editor

"OPERATION CUE" in Yucca Flats, Nevada, presented piped gas and LPG with the most severe test of their history. Underground utility gas pipe within 1500 ft of the 500-ft shot tower, and L.P. gas storage plants and domestic installations, one of which was 1840 ft away, were exposed to the violence of this largest of all A-bombs. Some of the gas appliances were actually in operation at the time of the blast.

"Paralyzing, terrifying thunder—like a crashing fulmination of hell—smashed into our Patton tank with a single lash of demoniacal rage." This is how Marvin Miles, an eye-witness reporter and member of the *Los Angeles Times* staff, described the fury of the 35-kiloton A-bomb blast on May 5. Mr. Miles braved the blast at the 3100-yd mark in one of 55 50-ton Patton tanks in the Army's Task Force Razor which rumbled toward ground zero three minutes after the first blinding flash of the bomb.

Amount of Havoc

The test was conducted jointly by the Federal Civil Defense Administration and the AEC for the purpose of determining the amount of havoc that would be wreaked by an enemy A-bomb attack on an American city. Another important reason for the test was to learn how effective various protective measures actually are in the face of a real atomic explosion. Manufacturers of all types of motor vehicles, house trailers, gas and electric utility equipment, and other commonly used items participated by furnishing equipment to be used in the test.

The dummy town, built to simulate conditions in any vulnerable American city, was dubbed "Survival City," and contained buildings and installations situated in such a manner that various degrees of bomb damage could be studied.

Many projects, identified by number, were set up to study the effects on particular classifications of equipment. Civil Effects Test Project 35.4, industrial and domestic gas storage and distribution, was set up for the purpose of testing all aspects of gas usage under atomic explosion conditions. Project 35.4a was concerned with LPG, while Project 35.4b dealt with natural and manufactured gas. The former was sponsored by the LPGA and its member companies in cooperation with the FCDA. Project officer was Paul W. Tucker of Phillips Petroleum Co., assisted by G. R. Webster, Pyrofax Gas Co.

The natural and manufactured gas project was sponsored by the AGA and its member companies also in cooperation with the FCDA. The leader of this phase of the test was Guy Corfield, Southern California Gas Co. The two segments of the industry worked closely together in preparing test equipment. Propane, for example, was used in utility-type pipelines laid near the shot tower because of the lack of a supply of natural or manufactured gas.

The premise under which the LPG tests were conducted was, in the words of the FCDA, that "knowledge of the effects of a nuclear explosion on typical liquefied petroleum gas equipment installations is necessary in planning post-disaster civil defense operations because of the importance of having available such equipment for emergency uses following a nuclear attack."

To attain this knowledge, installations of 100-lb bottled gas cylinders and 500-gal. ICC gas containers were tested at four different locations, each site being at a different distance from the blast. Typical LPG equipment was installed in accordance with normal domestic and commercial practice in several of the buildings erected for Operation Cue. All tanks were partially filled, and live gas was furnished to appliances in one of the buildings.

Expected Damage

An LPG distribution and storage station was installed at a point where substantial damage to aboveground structures was expected. Included in the station was an 18,000-gal. storage tank mounted on concrete saddles, a pump, a distribution building housing charging facilities and cylinders, and associated piping and controls. Moments after the blast the building disintegrated. The storage tank, however, remained intact, the only damage being a bent rung on the ladder.



At Yucca Flats, Nevada test site of the AEC, bottled gas was moved into Media Hill to demonstrate LPG's value as an emergency fuel for cooking.

LPG Cooks an "Atomic" Breakfast

FIFTY minutes after Operation Cue's 35-kiloton atom bomb had been touched off, an "atomic" breakfast was served to 1200 people with the aid of bottled gas. The mass feeding practice was part of the Atomic Eneregy Commission's civil defense operation.

Breakfast consisted of orange and grapefruit juice, scrambled eggs, scrapple, bacon, rolls, marmalade, coffee, and milk. Within 20 minutes after the shot was fired the meal was ready to be served. Quickly moving lines of newspapermen, television representatives, AEC and civil defense personnel, and official observers from all parts of the country were served without a hitch.

The breakfast was prepared and served by a group of 60 persons, composed of volunteers from all over the country, working through the Federal Civil Defense Administration's National Advisory Committee on emergency feeding. Each member of the group is a professional in his own field. The group represents professional associations and companies that are cooperating with civil defense in planning emergency mass feeding following atomic attack.

The meals prepared and served by this group are comparable to meals that would be given to casualties and evacuees following an attack on cities, provided the foodstuffs are available.

GAMA and the LPGA played important roles in the mass feeding exercise. Members of LPGA rushed in supplies of gas in portable tanks just before serving time. GAMA representatives were on hand to connect the fuel lines to the utility gas cooking appliances, and help with the preparation of the meal.

Because of unfavorable weather conditions, firing of the shot was postponed nine times. Observers, however, were on duty at "Media Hill" and other assigned posts before each postponement. Heavy coats, caps, and gloves did not always provide sufficient protection from the cold desert night air, and coffee brewed on LPG-fired ranges was heartily welcomed by the observers.

In one test run before the blast, GAMA and LPGA trucked in tanks of LPG into the observers' area, connected fuel lines, and had coffee ready for newsmen and TV representatives within 12 minutes.

The day following the firing of the bomb the mass feeding teams set up facilities in the forward area. Lunch for all observers studying the results of the blast was prepared.

Results of the practice—everyone who witnessed the meal preparation agreed that bottled gas is an ideal "disaster" fuel because of its portability and adaptability to standard gas appliances.

Civil defense authorities who went into the damaged area after the A-bomb explosion reported that the town's other liquefied petroleum gas systems suffered only superficial damage. In seven of eight tanks tested, volatile fuel remained intact and usable. In the eighth tank a valve had been sheared off and the gas had escaped. All of the eight cylindrical tanks had been moved from their original positions by the force of the blast.

"Doomsday Drive"

The large LPG station was located at the 4700-ft mark along with four other test buildings on "Doomsday Drive." Two of the other structures shared the fate of the station. One of these, a two-story masonry house, spouted billowing smoke from inside moments before it caught the full force of the shock wave and flew apart in every direction. This dwelling had been constructed of one outer layer of brick backed by a 4-in. wall of cinder block, and was typical of many homes throughout the nation. Wax dummies inside the building, representing an average American family, were badly mutilated.

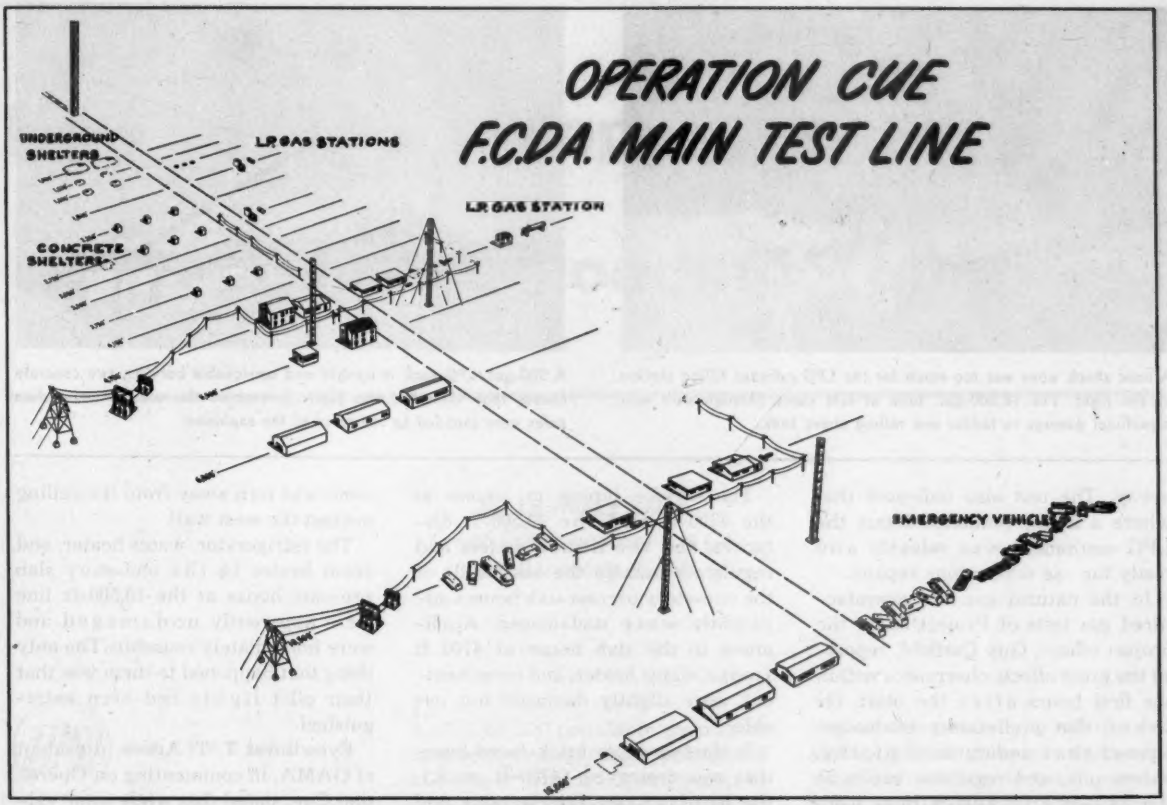
Also completely destroyed by the atomic holocaust was a single-story frame rambling house without a basement. This was similar to many modern one-story frame homes built on a concrete slab, except that the bathroom was constructed with reinforced concrete walls and ceiling to serve as a family shelter. Only the reinforced bathroom survived the blast.

Two Remain

Two of the homes on this residential street managed to remain intact, and suffered only blown-out windows, flash burns, nicks from flying debris, and interior damage. One of these was constructed of 8-in. masonry blocks, steel-reinforced. The other was made of pre-cast, expanded shale aggregate concrete.

Power lines on the ill-fated drive did not fare so well. Lines drooped to the ground, and five of the 15 power-line poles were snapped near the ground. The other poles were charred and splintered.

Project 35.4b, closely tied in with the LPG project, was conducted because "the extent to which natural



The above layout indicates the distance of various installations from the shot tower (upper left). The 18,000-gal. tank and the houses that suffered the greatest damage are shown at the 4700-ft line.

and manufactured gas utility installations may be disrupted in the event of nuclear explosions is of considerable interest to civil defense authorities, since such installations represent one of the basic utility services. This project is designed to obtain information on the effects of blast pressure on critical underground units of a typical gas distribution system."

Two Directions

Installations comprising valves pits, regulator vaults, and 6-in. gas piping in trenches both normal to and parallel to the direction of blast were made at two locations where different degrees of damage were anticipated. The pipe installations included both cast iron and steel sections with appropriate fittings and various types of service connections.

Also installed were service lines of steel, copper, and plastic material, which were connected to the residential-type houses constructed for the project. Both rigid and flexible sections through building walls were tested. Typical domestic gas appliances were located in several buildings, and live gas was used in only the brick house.

The AEC, in its preliminary evaluation of the results of the LPG project, reports that the project officer had the following to say regarding his observations within the first hours following the shock:

"Preliminary evaluation indicates that the liquefied petroleum gas bulk tank (at 4700 ft) sustained only superficial damage from the blast. It was confined to the ladder, the railing, and the walkway around the top of the tank. All valves and piping were intact. No gas was leaking, and the entire contents of the tank—15,400 gal. of LPG—remained available for use. The cylinder filling building was destroyed, although the piping to it was not damaged. The transfer facilities—a liquid pump and a vapor compressor—also appeared undamaged. The plant could quickly be put back into operation for emergency use by employing a small bulk delivery truck to perform transfer operations and cylinder filling until electric power lines were restored to service. In fact, for most uses, the gas in the storage tank would be available by taking advantage of gravity flow plus the inherent pressure of the gas itself."

He reported that no LPG containers in the entire test area were ruptured. Even those located at the 1840-ft and the 2750-ft lines suffered only minor damage. Both of the 500-gal. tanks at these two forward locations still had their gas contents available for immediate use.

Available for Use

Seven of the eight cylinders used in the test were likewise available for service, although they were displaced somewhat from their original positions. The eighth had its valve sheared off by the impact. The major damage to the tanks was occasioned by the blast itself rather than by flying debris. Thermal damage was nonexistent. There was no evidence of fire.

The test indicated that L.P. gas will be available as a fuel when exposed to atomic effects of this degree of se-



Atomic shock wave was too much for the LPG cylinder filling station at the right. The 18,000-gal. tank at left came through with only superficial damage to ladder and railing above tank.



A 500-gal. LPG tank is upright and serviceable between two concrete houses that withstood the blast. Several of the wooden power line poles were snapped by the force of the explosion.

verity. The test also indicated that where a house remained intact the LPG equipment was salvable and ready for use with minor repairs.

In the natural gas and manufactured gas tests of Project 35.4b, the project officer, Guy Corfield, reported the gross effects observable within the first hours after the blast. He found that preliminary evaluation showed that underground piping, valves pits, and regulator vaults at the 1470-ft and 4700-ft lines were apparently undamaged with the exception that the aboveground 4-in. vent pipes of the regulator vault at 1470 ft were snapped off at ground level.

Pipe, buried 3 ft in the ground, was undamaged. Valves pits and vaults had cast iron covers at ground level which were slightly displaced by the impact at 1470 ft, but were unmoved at 4700 ft.

The service piping to houses at the 4700-ft and the 10,500-ft distances, and the house meters and regulators outside the east walls of the one-story precast slab houses apparently were undamaged. Appliances in the slab house at 4700 ft (range, water heater, and room heater) were slightly damaged but usable.

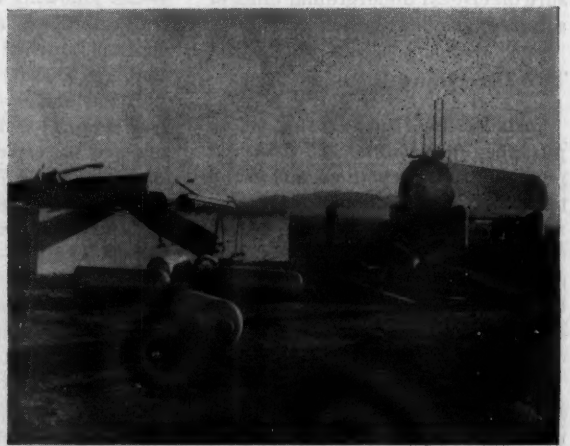
In the two-story brick-faced home that was destroyed (4700-ft mark), the appliances (refrigerator and range) which were located on the first floor were badly damaged and apparently unusable. The water heater and the clothes dryer in the basement of this house were undamaged. The gas refrigerator, and the meter attached to the basement wall were torn apart at the piping connections and were lying on the ground, but probably would be usable when repiped. House piping in the basement was torn away from the ceiling nearest the west wall.

The refrigerator, water heater, and room heater in the one-story slab pre-cast house at the 10,500-ft line were apparently undamaged and were immediately reusable. The only thing that happened to them was that their pilot lights had been extinguished.

Eyewitness T. T. Arden, president of GAMA, in commenting on Operation Cue, stated that while some valuable information was obtained from the tests regarding gas appliances, no general conclusions as to how to install them to safeguard them from atomic attack had been drawn. The bomb used in Operation Cue was only 35 kiloton rating, Mr. Arden pointed out, and appliances that had come through unscathed in the test might be completely destroyed if subjected to a hydrogen bombing. ■



This 500-gal. tank, on the 4700-ft line, came through A-bomb blast unscathed. At the same distance from the shot tower as the brick building which was completely razed, the California-type house shown here suffered little damage.



Cylinders of LPG were scattered on the ground when the station building disintegrated, but none developed leaks. Contrary to early newspaper reports, the 18,000-gal. tank at right did not explode, but suffered only superficial damage.

How to Figure Vapor Savings When Unloading Tank Cars

By Lawrence Smith
Smith Precision Products Co.
So. Pasadena, Calif.

BPN exclusive

The physical aspects of unloading tank cars with liquid pumps will be the subject of a two-part article by Mr. Smith, which will appear in early issues of BPN.

Part 1 in that series, titled "Getting the Syphon Started," will emphasize the importance of using the proper method for getting the flow started to the pumps when cars are being unloaded, and will discuss three methods that can be used.

The second installment will be headed, "Tank Car Excess Flow Valves and the Pumping Problems They Cause." In it, the author will explain the importance of the resistance to flow of the excess flow valve, which is so much greater than that of any other device in the line that it effectively governs the operation, and will make recommendations on placement of the pump that will take into consideration this effect.

LIQUEFIED petroleum gas may be transferred mechanically in either of two ways: with a liquid pump or with a vapor compressor. The pump will move liquid only, and will not remove the vapor content from a tank, but will not develop the high pressures required for the fast filling of small tanks. Therefore, in many plants, both a pump and a compressor are required.

In a bulk plant where a great many tank cars are unloaded, the matter of saving the vapor content in tanks being unloaded into storage is important, as otherwise the vapor left in the car goes back to the supplier when the car is returned. Some LPG suppliers attempt to make a credit allowance for vapor returned in cars, but since it is difficult, if not impossible, to make an accurate allowance, many suppliers make none. If a large number of tank cars are unloaded, and if the supplier allows little or no credit for the vapor content, a dealer should look into the possibility of installing a compressor whenever it can be shown that the compressor unit will pay for itself by the savings accrued from the vapor unloaded.

A good compressor cannot unload liquid from tank cars any faster than a good pump of equal capacity. The problem of whether to use a compressor thus boils down to the economics in vapor saving, and the purpose of this article is to offer tables that will enable those who must consider this problem to get a reasonably accurate estimate of the amount of savings they can expect to receive by installing a compressor.

A natural mistake that is frequently made in estimating the savings of vapor recovered, is to assume that *all* the vapor can be drawn from the tank by the compressor. This is a misleading assumption, as drawing all of the vapor from a tank requires that it be pulled down to a perfect vacuum. This is impossible to do even with the most expensive experimental laboratory-type equipment. Actually, it is agreed that there is a practical limit of pressure reduction beyond which it is not economical to operate the compressor unit. Opinions differ on just what the practical limit is, but concensus places it somewhere between 15 and 40 lb.

The series of four tables presented herewith show savings which may be accomplished in four cases. Table I indicates the savings if gauge pressures are reduced to 45 psig; Table II shows savings at 30 psig; Table III lists the values for 15 psig; Table IV is for O psig. As an illustration of how these tables are to be used, suppose propane is being handled at a temperature of 60° F, and the compressor is to be shut off when a gauge pressure of 45 psig has been reached.

TABLE I.

PRESSURE REDUCED TO 45 PSI GAGE BY COMPRESSOR
(There are no savings with Butane for any temperature, at this pressure reduction)

TYPE LIQUID AND TEMPERATURE OF CAR (°F.)	POUNDS SAVED	EQUIVALENT GALLONS AT 60° F.	MONEY VALUE OF FUEL SAVED, AT VARIOUS DELIVERED COSTS PER GALLON 4¢	6¢	8¢	10¢	12¢	14¢	16¢	18¢	20¢
PROPANE, — 40°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, — 20°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 0°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 20°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 40°	242	57	2.30	3.40	4.60	5.70	6.80	8.00	9.10	10.30	11.40
PROPANE, 60°	582	137	5.50	8.20	11.00	13.70	16.40	19.20	21.90	24.70	27.40
PROPANE, 80°	1004	237	9.50	14.20	18.90	23.70	28.40	33.20	37.90	42.70	47.40
PROPANE, 100°	1534	361	14.40	21.60	28.90	36.10	43.30	50.50	57.70	64.90	72.20

TABLE II.

PRESSURE REDUCED TO 30 PSI GAGE BY COMPRESSOR
(There are no savings with Butane for temperatures lower than 100°, at this pressure reduction)

TYPE LIQUID AND TEMPERATURE OF CAR (°F.)	POUNDS SAVED	EQUIVALENT GALLONS AT 60° F.	MONEY VALUE OF FUEL SAVED, AT VARIOUS DELIVERED COSTS PER GALLON 4¢	6¢	8¢	10¢	12¢	14¢	16¢	18¢	20¢
BUTANE, 100°	103	22	0.90	1.30	1.80	2.20	2.60	3.10	3.50	4.00	4.40
PROPANE, — 40°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, — 20°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 0°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 20°	132	31	1.20	1.90	2.50	3.10	3.70	4.30	5.00	5.60	6.20
PROPANE, 40°	412	97	3.90	5.80	7.80	9.70	11.60	13.60	15.50	17.50	19.40
PROPANE, 60°	769	181	7.20	10.90	14.50	18.10	21.70	25.40	29.00	32.60	36.20
PROPANE, 80°	1190	280	11.20	16.80	22.40	28.00	33.60	39.20	44.80	50.40	56.00
PROPANE, 100°	1715	403	16.10	24.20	32.30	40.30	48.30	56.40	57.70	64.90	72.20

TABLE III.

PRESSURE REDUCED TO 15 PSI GAGE BY COMPRESSOR
(There are no savings with Butane for temperatures lower than 80°, at this pressure reduction)

TYPE LIQUID AND TEMPERATURE OF CAR (°F.)	POUNDS SAVED	EQUIVALENT GALLONS AT 60° F.	MONEY VALUE OF FUEL SAVED, AT VARIOUS DELIVERED COSTS PER GALLON 4¢	6¢	8¢	10¢	12¢	14¢	16¢	18¢	20¢
BUTANE, 80°	107	23	0.90	1.40	1.80	2.30	2.80	3.20	3.70	4.10	4.60
BUTANE, 100°	336	72	2.90	4.30	5.80	7.20	8.60	10.10	11.50	13.00	14.40
PROPANE, — 40°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, — 20°	0	0	0	0	0	0	0	0	0	0	0
PROPANE, 0°	106	25	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
PROPANE, 20°	323	76	3.00	4.60	6.10	7.60	9.10	10.60	12.20	13.70	15.20
PROPANE, 40°	603	142	5.70	8.50	11.40	14.20	15.60	19.90	22.70	25.60	28.40
PROPANE, 60°	960	225	9.00	13.50	18.00	22.50	27.00	31.50	36.00	40.50	45.00
PROPANE, 80°	1380	324	13.00	19.40	25.90	32.40	38.90	45.30	51.80	58.30	64.80
PROPANE, 100°	1900	447	17.90	26.80	35.70	44.70	53.60	62.50	71.40	80.30	89.20

TABLE IV.

PRESSURE REDUCED TO 0 PSI GAGE BY COMPRESSOR
(There are no savings with Butane for temperatures lower than 60°, at this pressure reduction)

TYPE LIQUID AND TEMPERATURE OF CAR (°F.)	POUNDS SAVED	EQUIVALENT GALLONS AT 60° F.	MONEY VALUE OF FUEL SAVED, AT VARIOUS DELIVERED COSTS PER GALLON								
			4¢	6¢	8¢	10¢	12¢	14¢	16¢	18¢	20¢
BUTANE, 60°	164	35	1.40	2.10	2.80	3.50	4.20	4.90	5.60	6.30	7.00
BUTANE, 80°	313	67	2.70	4.00	5.40	6.70	8.00	9.40	10.70	12.10	13.40
BUTANE, 100°	668	143	5.70	8.60	11.40	14.30	17.20	20.00	22.90	25.80	28.60
PROPANE, – 40°	17	4	0.20	0.20	0.30	0.40	0.50	0.60	0.60	0.70	0.80
PROPANE, – 20°	136	32	1.30	1.90	2.60	3.20	3.80	4.50	5.10	5.80	6.40
PROPANE, 0°	297	70	2.80	4.20	5.60	7.00	8.40	9.80	11.20	12.60	14.00
PROPANE, 20°	515	121	4.80	7.30	9.70	12.10	14.50	16.90	19.40	21.80	24.20
PROPANE, 40°	790	186	7.40	11.10	14.90	18.60	22.30	26.00	29.80	33.50	37.20
PROPANE, 60°	1139	268	10.70	16.10	21.40	26.80	32.20	37.50	42.80	48.20	53.60
PROPANE, 80°	1555	366	14.60	22.00	29.30	36.60	43.90	51.20	58.60	65.80	73.20
PROPANE 100°	2080	489	19.60	29.40	39.10	48.90	58.70	68.50	78.30	88.10	97.80

Check with Table I. Note a saving of 582 lb or 137 gal. The table helps further by figuring the money value of this fuel. Suppose the cost is 10 cents per gal. delivered. The table shows a saving of $13.70. At 12 cents per gal. the saving would be $16.40, etc. Use the delivered cost, that is, freight included.

With single-car savings of this order, a gross savings of $1300 to $1600 per 100 cars unloaded could be expected. The expense of running the compressor would depend upon how long it takes to unload the vapor. If it takes two hours to do this, about $1 could be figured for the electricity and $6 for the operator's time per load. Compressor depreciation, maintenance, oil, etc., should also be allowed for, perhaps at a rate of $2 to $4 per load, depending upon the make and model. Thus, while there is a gross savings of $1300 to $1600, there is an extra expense of $900 to $1100 on a 100-car basis. A net saving of only $200 to $700 results. Whether this would eventually pay for the compressor and its installation requires examination and study.

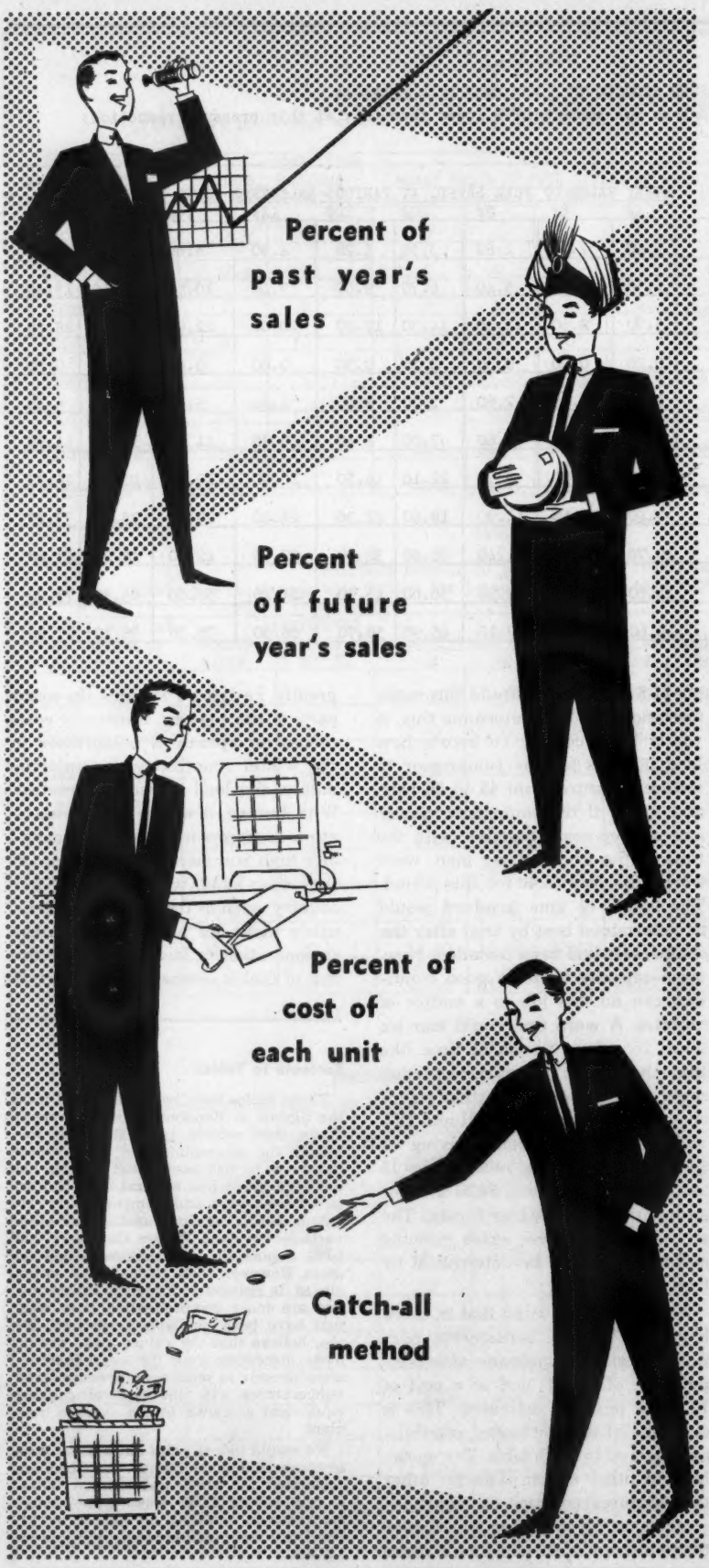
What would happen if it were decided to run the compressor until the pressure in the car was down to 30 psig? Reference to Table II shows that 769 lb or 181 gal. would be saved, having a total value of $18.10 at 10 cents per gal. Thus, an increased saving of $4.40 results. Would this extra operation pay? To determine this, it would be necessary to know how long it takes for the compressor to reduce pressure from 45 to 30 psig, and to see if the compressor power and upkeep costs, together with the time of the unloading man, were worth less than $4.40 for this period. The length of time involved would be determined best by trial after the compressor had been installed. New, large-capacity units in good condition can do this job in a matter of minutes. A worn unit could take an hour. In a long period of time like this, the extra pressure reduction could not be justified. Further reference to the other tables (III and IV) will show an additional saving of $4.40 if pressure is reduced to 15 psig, and an additional $4.30 if pressure can be lowered to 0 psig. The advisability of these extra running periods could also be determined by trial.

Always keep in mind that in these examples we are considering particularly straight propane at a temperature of 60° F, and at a cost of 10 cents per gal. delivered. This is only one of a great many possibilities covered by each table. Try working out other examples for other temperatures common in your operations, at the price you pay. Lower temperatures with propane mean greatly reduced savings. In many parts of the country, it actually costs money to operate a compressor in the winter months, when, unfortunately, the load is usually greatest. With butane, it never pays to operate a compressor, except at unusually high summer temperatures. On the other hand, warm areas of our country, such as the Southwest, definitely make for profitable compressor operation in locations where the cost of fuel is comparatively high. ■

Footnote to Tables

These tables have been calculated from the figures in Handbook Butane-Propane Gases, third edition, pages 26 and 27, following the assumption that LPG vapors behave as perfect gases. Heat transfer has not been taken into account. This can act in different ways, and is impossible to calculate, due to the time function and other variables involved. We are also aware that LPG vapors do not behave as perfect gases. However, these tables are as accurate as is necessary for good estimating, and are more comprehensive than most that have been available heretofore. We also believe that the values given are no more inaccurate than the usual inaccuracies present in measuring pressures and temperatures with the type of gauging equipment available at the average bulk plant.

We would like to point out that for ease in conversion of the figures, the tables are calculated for 10,000 water-gallon tanks. If cars having 11,000 water-gallon tanks are received, multiply all figures by 1.1. For 12,000 water-gallon tanks, multiply by 1.2, etc.



Four Foundations

In the May issue of Butane-Propane News, a blueprint for an appliance merchandising program was presented, covering the major aspects of the subject — market surveys and analyses, promotion and advertising, and selling techniques.

Any blueprint must be supplemented by a set of detailed "specifications." Over the next several months, BPN will fill in those specifications to enable the sales manager to build his sales structure.

In this series, the steps necessary to the developing of an advertising program will be followed from the first consideration of "Four Foundations on Which to Build Sound Advertising" to the final element in the plan. This series was prepared especially for BPN by A. D. Burroughs, an experienced advertising executive, and will be augmented by later articles by other experts in the field.



n Which to Build Sound Advertising

By A. D. Burroughs

EVERY LPG dealer who advertises is faced with the problem of how much to spend. How much money must be invested in advertising channels to get a rise in sales volume? What is the basis for this figure? Is there any method, simple and clean-cut, which can be tailored to fit the dealer's own needs?

A few LPG dealers are buying their advertising a little here, a little there, a little everywhere. But they are not investing in profitable advertising.

Profitable advertising must return the original investment plus a profit. This cash comes back in additional business volume. And advance planning of the advertising expenditure is essential for profitable advertising.

Some dealers call this advance planning advertising appropriation. Some call it budget. Others refer to it as allowance. But regardless of what they call it, all agree that it is essential to reap a full harvest from advertising. It is the first vital step for profitable advertising.

There are several methods in practical operation. One of these methods will adapt itself to each dealer's needs.

Percentage of past years' gross sales is the most commonly used basis for figuring the advance advertising expenditure. The average figure for this is approximately 2.5%. Some LPG dealers are spending more than this amount. But few report spending less than this amount and still getting sufficient sales boost from their advertising.

Most dealers using the percentage of past years' gross plan report that they sub-divide this 2.5% of the total gross into radio, newspaper, direct mail, outdoor posters, and other specific advertising channels. They know how much they have to spend for each media. They can say "No" to a media salesman and give specific reasons for their answer.

Many dealers using the percentage of past years' gross as a basis for their advertising spending tell us that they often break down the year into shorter periods. Some use quarters, others use a six-month period. Many follow a seasonal spending program. They check the books for the spring season's gross take for last year. They plan this year's spring advertising on this figure.

Shorter time periods are particularly suitable for those dealers just starting in business, or just starting in advertising. Those with considerable cash investments (or credit purchases) for other major improvements or equipment like the shorter-time periods. It keeps more working capital flexible.

Percentage of the future year's sales takes a little more skill to figure, but it is another popular method for advertising planning. It is used often by growing concerns and by dealers striving aggressively for new business. When using this plan, estimate the total gross for the coming year. Then allow a definite percentage of this gross to invest in advertising. The advertising is to insure that the dealer does get this estimated figure.

Most dealers using this percentage of the future year's gross sales volume invest a higher percentage. Their average is usually between 3% and 4%. Common business sense indicates the need for the higher percentage. The dealer is working with estimated figures. The higher percentage is necessary to make sure he sells enough to reach his goal.

The unit method is used by some dealers with considerable success. It is the same method used by most automobile advertising. The dealer simply appropriates a definite amount of cash—a sort of levy—for each appliance, each bulk tank, etc., that he has (or will have) on hand during the quarter, or annual, time period.

This unit method often takes a little more time and study than the other methods in use. For full success, the dealer should know from past records what it cost to sell merchandise in the past. In short, how much did he have to spend last year for sales traced to advertising channels? And how many did he sell for this money invested in advertising? The dealer knows the advertising cost per unit for advance planning of advertising spending.

The catch-all method is far from the best, but it's far better than none. It is often unnecessary for many businesses to do any advertising at all. This is the system where the dealer throws every penny he can get from his business into planned advertising. He "catches all" he can from other portions of the business, and throws it into advertising for more sales volume.

This method is often used by new dealers. Working capital is tied up. Yet advertising is necessary to sell the goods and the services available. Short time periods of advance planning, generally about three months,

are the most practical and profitable time period.

Regardless of which method the dealer uses, there is one essential ingredient for successful advance planning of the advertising budget. Every successful advertising LPG dealer agrees on this point. The dealer must set up an additional fund for advertising emergencies.

"Hot Day" Fund

This reserve fund gives the necessary flexibility needed for advance advertising planning. Without it, many unforeseen events can come up to throw the previous plan out of order. It does not need to be a large amount of cash. But don't touch it unless something really hot comes up. It is the advertising ace up the dealer's sleeve. He can participate in some local event immediately on the cash from the emergency reserve fund, while the previous plan is still intact.

BPN exclusive

These are the methods in actual profitable operation by non-professional advertisers. They are used by LPG dealers under the supervision of their own personnel. There are many other methods, of course, but these are used by professional advertising agencies and highly skilled advertising folks.

These four methods give a concrete foundation for advance planning of advertising. The average of 2.5% of the past year's gross, 3 to 4% of the future year's gross will provide a profitable guiderule to follow. For the unit basis, old records of advertising cost per unit sold will be the working guiderule.

One for You

All of these methods are working in practical operation. One of these will suit each dealer's business needs. With these methods advertising will be better planned, get more attention, do more selling. The dealer knows exactly how much he is spending and how much he is going to spend. He knows what this advertising investment is doing for him in additional sales volume. Any of these methods will help the dealer get on that "gravy cart" of planned advertising expenditure without overspending. ■

HOW TO PLAN SUCCESSFUL ADVERTISING: PART 2

Where Should the Dealer Spend His Advertising Dollar?

By A. D. Burroughs

"The dealer should choose the medium . . . that reaches the most people within his trade territory, limiting his advertising as nearly as possible to his present or potential trade area."

AFTER the LPG dealer has set up his advertising budget, the next major question is where to spend the advertising money to reap the most in additional sales volume.

Nearly every ad medium classifies the dealer as a good potential sponsor. Media salesmen call on the dealer weekly. Each salesman makes his pitch. Each is convinced that his medium is the best, that his specific newspaper or radio is tops in the field.

Confusion Reigns

The result is natural confusion. How can the dealer know accurately which media should get the biggest slice of his advertising pie? How can he know which radio station, which newspaper, which outdoor advertising company, which specific medium to select to get the most for every advertising dollar spent?

Media selection is a much debated question in professional advertising circles. Complete books are written on why radio outsells newspaper, or vice versa. But in actual business operation, there is only one guide for placing ad money. The dealer should choose the medium, and the specific channel within that medium, that reaches the most people within his trade territory, limiting his advertising as nearly as possible to his present or potential trade area.

Limiting advertising to the regular or potential trade territory avoids wasting ad money. The dealer does not spend cash selling to people who are not located in the area where the dealer does business. Most ad channel rates are based on the number of people the medium reaches. The dealer pays for each person. Every person he pays to sell outside his trade area is wasted advertising circulation; he spends more and gets less return in sales volume.

How can the dealer know which medium reaches the most people within his trade area, the fewest outside?

ABC for Newspapers

With newspaper advertising and circulation the working guide is the Audit Bureau of Circulation reports. These are generally available at public libraries or from newspaper advertising salesmen.

The ABC is an independent organization compiling an accurate report of newspaper circulation. The reports indicate the number of copies issued and how they are delivered. It tells what part of the subscription list is overdue in payments. The dealer knows how much of the circulation is obtained through special offers such as contests, premium offers, and the like. And perhaps

most important, ABC reports give the dealer a break-down of the circulation by areas. He can ascertain the number of circulation copies within the city proper, in the outlying near-by trade area of the town, and in all other areas served by a definite number of copies of that newspaper.

Within Your Area

The dealer's selection for profitable advertising is the newspaper with the greatest circulation within his present or potential trade area. This is not necessarily the paper with the greatest total circulation.

For radio selection, the dealer will need coverage maps and reliable audience survey results (such as *Hooper, Neilson*) to make his selection of the radio station. Salesmen will have this material. Get the material from each radio time salesman, then compare the information.

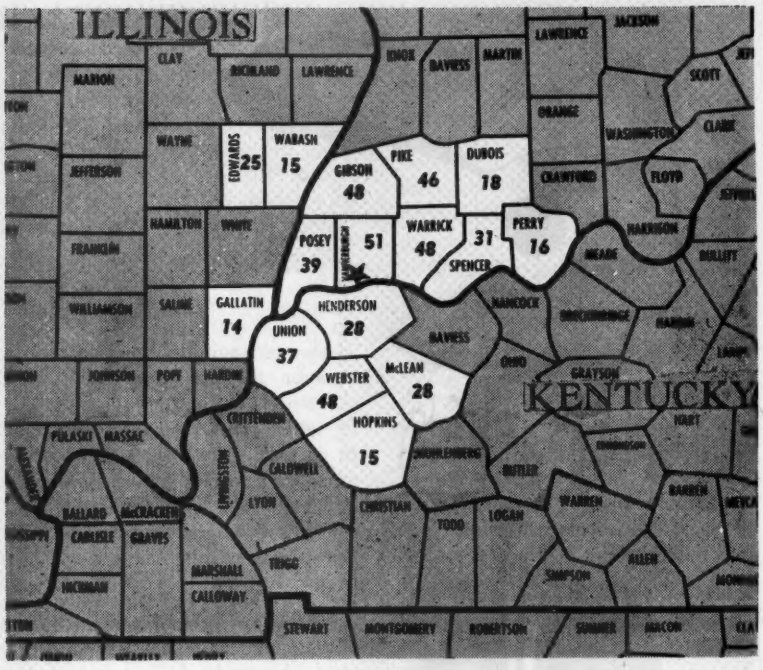
Here again the best buy is not always the most powerful radio station (and the most expensive). The coverage maps show the area served or covered with clear reception by the radio station. They will give a break-down of the dealer's territory indicating the percentage of the total listeners this station has. Audience surveys will give the number of sets and listeners the station has at a particular time of day.

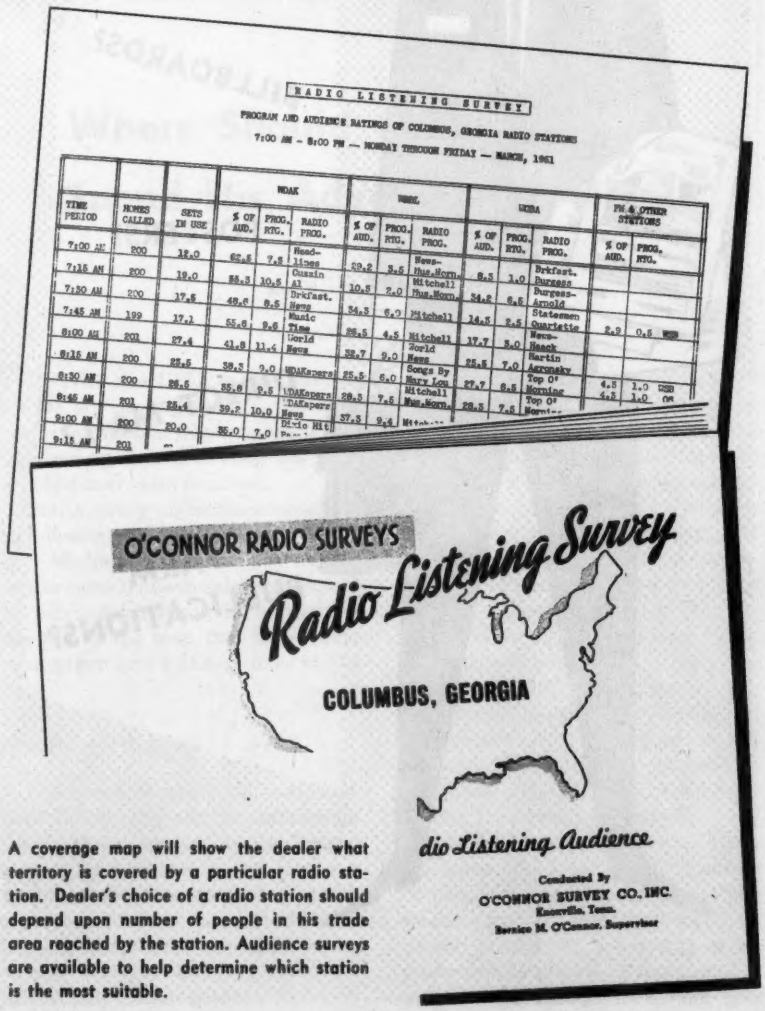
Biggest Not the Best

The dealer should select the radio station with the largest percentage of the total listeners within his own sales area. A station with a comparatively small coverage may have a large share of the farm audience. This is the dealer's buy if he is after the farm market. Another station with a fairly small total area but with a lion's share of the local urban listeners is his best buy if this is his market area. The dealer should buy the most powerful station with the greatest area and most total listeners only if he is selling or can sell to all of this area.

Outdoor advertising selection is made on the same guiding rule—reaching the most people within the trade area, the fewest outside it. With outdoor advertising (billboards, junior-size posters, etc.) the "circulation" is based upon the number of cars passing the sign that can get a







A coverage map will show the dealer what territory is covered by a particular radio station. Dealer's choice of a radio station should depend upon number of people in his trade area reached by the station. Audience surveys are available to help determine which station is the most suitable.

good impression. The number of impressions a board gives per month is the foundation of the price.

The Traffic Audit Bureau has these figures, or a mechanical counter can do the job in rural sections. If the dealer sells to a large territory, the larger boards with the largest number of impressions will be the most productive purchase. But if he is selling to a more limited area, the less expensive smaller posters placed within and throughout his own local trade territory does the same job at less cost.

Key to Success

Direct mail is the most easily controlled medium. A mailing list is the key to success. This can limit the message more accurately than most other media. Mailings should go only to those so located that they can respond with additional business. Mailing lists made up from directories within the selling area, from past customers, and from drawings all get the message to the potential customer with a minimum of waste circulation.

Car cards on public transportation units, handbills, farm publications all are often used successfully to sell services and merchandise. But the same basic rule applies to every advertising selection.

Reach More People

This should clarify the reason why one LPG dealer will declare newspaper advertising as the most successful, while another gives the major percentage of his ad buget to radio. It will indicate that one medium in one locality will do a better selling job. This is because, basically, this medium is reaching the most people, the most regular and potential customers, within the trade area at the lowest cost. The lower cost per sale resulting from advertising comes from limiting the advertising as nearly as possible to the present and potential sales territory.

By doing this the dealer will put himself on that profitable merry-go-round of more sales returns from less advertising dollars. It's the road to the ideal advertising situation of selling to the right people at the right place at the right time instead of just reaching more people more times with less sales. ■



LPG Cures 2 Million Square Yards of Concrete Pavement

By Otis C. Williams Jr.

BPN field report

L. P. gas, replacing kerosene heaters, oil salamanders, and oil-fired steam boilers, provides a clean, economical, and efficient means of curing the vast concrete surfaces of the new Maine Turnpike extension.

LPG is being used on the largest construction job in the long and colorful history of the state of Maine. Running the 66 miles between Portland and the capitol city of Augusta, the new Maine Turnpike will contain 15 million lb of steel and 2 million sq yd of roadway pavement. A clean and efficient means of curing this vast surface of concrete was paramount if the job was to be completed within a reasonable length of time, and LPG provided the means of doing the job quickly and economically.

Heavy concrete construction along the new turnpike extension has literally been "cooked" with bottled gas. And production has continued right through the winter, something that could not have been done a few years ago.

Freeze and Buckle

Concrete that is poured during the winter months and not properly protected against freezing frequently must be dug up and replaced. Curing is uneven, water in the concrete mixture freezes, and buckling is often the result. Formerly, all bridge and road construction ceased in the state of Maine when its long, cold winters set in about the first of November. With the aid of home-made LPG equipment, construction gangs worked this past winter, despite much cold weather.

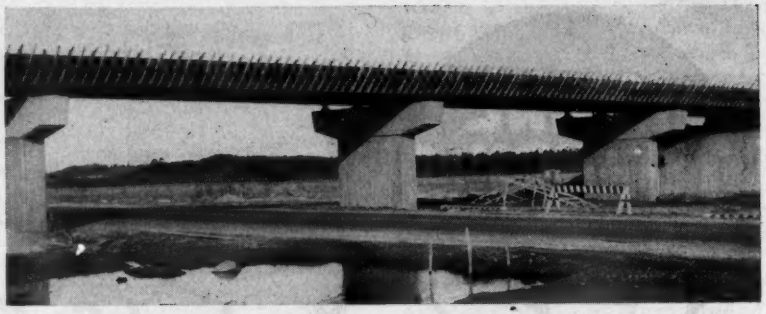
Hand-made heaters utilizing LPG were used by several independent contractors working on the turnpike. Typical of heaters used was the type conceived by the Ellis C. Snodgrass firm of Portland. A regular gas range burner was welded to a piece of steel beam and fastened inside an empty steel oil drum. The drum was placed under a section of canvas, along with two or three others, and their heat dried a form of concrete in approximately 11 days. Rubberized tubes led from the heaters to propane bottles outside the canvas enclosure. Joe Guite, assistant superintendent of the Snodgrass firm, reports that one cylinder would fire a heater for 56 to 72 hours, depending on the outside temperature and the heat required.

The Snodgrass company, like oth-



This culvert headwall is an example of the kind of construction work which has provided a new market for L. P. gas in Maine.

ers working on the turnpike, formerly used kerosene heaters, oil salamander stoves, and oil-fired steam boilers to generate the heat necessary to prevent freezing of the concrete while curing. Many disadvantages were associated with the use of these methods. Oil and kerosene burners tended to give off a pall of smoke, smudging fresh concrete and nearby equipment. Kerosene burners had to be watched 24 hours a day, and labor costs were high. Oil and kerosene are frequently difficult to control, and temperatures often fluctuated so much that proper curing was impossible.



Huge concrete supports of Maine Turnpike bridge construction, just outside of Portland, were dried with L. P. gas burners. Work can continue through the winter when LPG is used.

Problem Solver

None of these problems exists with propane usage. No smoke is given off from burners operating on LPG, and concrete stays clean and fresh. Once a burner is lighted and properly adjusted, no one is required to watch it. Temperature control is simple, and heat from LPG burners varies little.

Besides being used on highway concrete forms, LPG curing has been successfully adapted to bridge abutments and supports and to culverts on the turnpike. The turnpike extension is 42 miles long, and is costing the state approximately $2 million. Thousands of bottles of LPG have been used in curing concrete construction along its length.

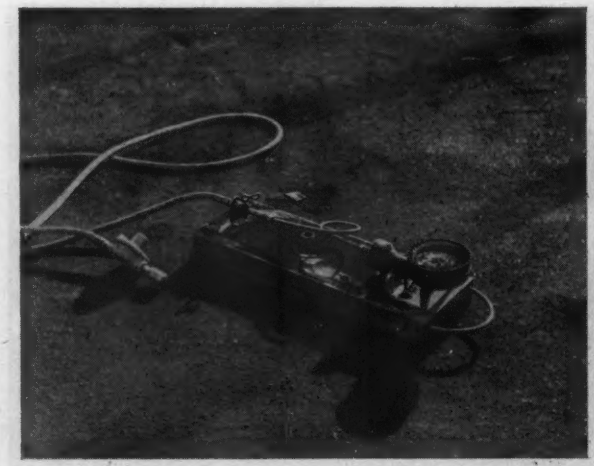
Another satisfied user of propane on the turnpike is the Gyl Wyner Co. Inc. of Malden, Mass. The company's superintendent, Clyde Kelley, says of LPG, "It's the best thing we have ever tried. You don't have to watch it all the time and it gives you absolute heat control."

Twenty-eight Bottles

The Wyner firm had 42 heaters made up, using gas stove-ring burners obtained from Suburban-UDI Co. of Portland. Each burner produced approximately 4000 Btu, and used about 28 bottles of gas in curing the amount of concrete used in one highway slab. The firm put the heaters to work curing concrete used in piers, slabs, pier footings and caps, head walls, and abutments.

None of the firms contacted was sure who initiated the use of propane on the turnpike job, but Clyde Kelley believes Savin Construction Co. of Hartford, Conn., was the first to use it extensively. He states that the work that Suburban-UDI did in connection with the Littleton, N. H., dam development supplied some useful information for the later application of LPG on the turnpike. At Littleton, LPG was used extensively in curing concrete, for metal cutting, and for preheating metal to be welded.

LPG also supplied heat for the welders working on the dam. Canvas was hung over the concrete walls and gas salamanders were used to afford comfort for the workers. A 20-cylinder hookup supplied four salamanders constructed with Johnson 40-ABC atmospheric ring burners. Each delivered 107,000 Btu an hour, and was run 16 hours per day. ■

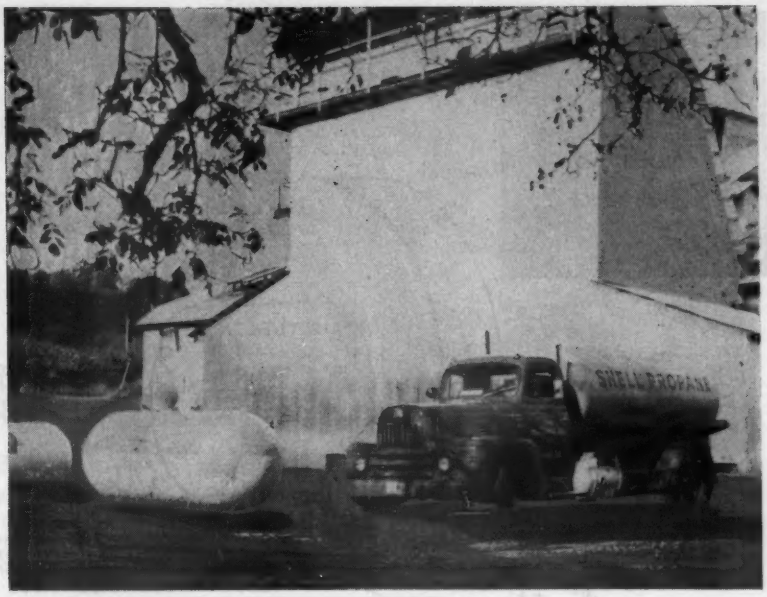


An ordinary gas stove burner welded to a piece of steel beam, together with its own petcock, is typical of the burners rigged by contractors to cure concrete along the new Maine Turnpike extension.



Burners are supplied with fuel from cylinders through rubber hoses. The burner is placed inside a steel oil drum and set under heavy canvas covering freshly-poured concrete to dry it out.

BPN staff report



Multnomah Fuel Co.'s tank truck prepares to refuel the three storage tanks at the Hudson House nut dryer. To supply the dryer's fuel demand, Multnomah installed one 1000-gal. and two 500-gal. tanks, which are serviced regularly from Portland.

Steady Heat Makes LPG Ideal for Hudson House Nut Dryer

An even temperature must be maintained in drying nuts or the oil in them will cook and give the nuts a rancid taste. L.P. gas, because it will maintain a steady temperature, has proved a boon to Hudson House, a nut packing firm in Dundee, Ore.

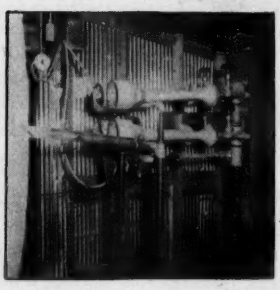
By Harold C. Hood
Field Editor

NUTS, to be marketable, must have a large percentage of the natural moisture, contained at the time of harvesting, removed. LPG is doing a fine job of nut drying for Hudson House Inc. of Dundee, Ore. This concern for many years has been one of the foremost producers and shippers of nuts, fancy assortments and otherwise, in the United States. Brazil nuts from South America, almonds from the southeastern states, and other varieties from all parts of the world are sent to Dundee to be added to the native-grown filberts and walnuts in making up assortments bearing the well-known Hudson House label.

Reasons for drying nuts are threefold: to give the crisp texture commonly associated with nuts, to improve flavor, and to prevent rotting and molding. Green nuts, allowed to stand after harvesting without drying, deteriorate rapidly.

Three years ago sales at Hudson House experienced a decided upswing. Existing oil-fired dryers were unable to handle the added volume of nuts, and an economical means of drying the overflow was sought. The possibilities of using propane in an





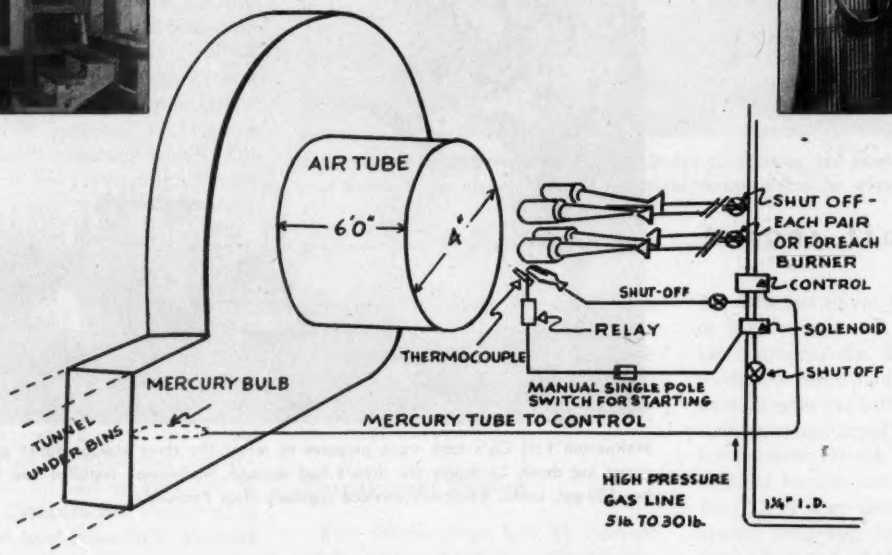


Diagram of the Hudson House nut dryer. Four propane burners (see photo, upper right) are mounted near the centrifugal fan housing (see photo, upper left) and are directed at the shaft of the fan. Fan blows hot air into a chamber below the drying bins. Burners are approximately 1 ft from the air intake tube. There is an air flow switch in the tunnel under the bins (not shown) to break the circuit to the solenoid should the fan fail to function due to a broken belt, etc. This switch then shuts off gas to both pilot and burners.

auxiliary dryer were studied, and it was decided to install a four-burner, 12-bin unit that would be capable of processing 28 tons of nuts at one time.

Equipment Less

Propane in this section of Oregon, because of long supply routes and consequent high transportation costs, is a more expensive fuel for this purpose than oil. However, the initial expense of equipping a dryer building with propane-burning apparatus was far less than that for an oil-burning installation similar to the existing dryer, which had required the erection of an expensive stack for creating draft and removing oil fumes from the vicinity of the nuts being dried. A maze of refractory brick had been erected in conjunction with the three large oil burners for transferring heat from the flame to the air circulated through the nut bins.

Multnomah Fuel Co. of Portland was consulted as to the most economical installation that could be used. A system was selected in which four Ransome burners are directed into a sheetmetal tunnel upstream from a large, centrifugal fan. Air being sucked into the tunnel for circulation around the nuts mixes with the hot combustion gases from the burners.

The 12 drying bins consist of three tiers of four sections each, fine-mesh wire being used for the sides and bottoms of the compartments. Each tier is sloped toward the one beneath, and a series of trapdoors enables the operator to transfer the contents of the top bins to the middle bins and then on to the lower bins after the required lapse of time. The hot air is forced from the bottom of the structure up through the nuts and out vents under the roof.

Loading of the bins is automatic. Green nuts are put through a water-spray bath and are then hoisted to the top of the dryer by a conveyor belt. Total time in the three sections is approximately 30 hours with exact time depending upon atmospheric conditions and moisture content of the green nuts. Each bin in the lower tier is equipped with a chute and gate, and when nuts in the bottom compartment have reached the desired degree of drying the gate is tripped and the nuts fall into waiting tubs. Trap doors on the middle and upper bins are subsequently opened and a fresh load of green nuts loaded into the top tier. Each compartment holds somewhat over 2 tons of nuts.

Remove Moisture

During this three-stage drying process moisture content of the nuts is lowered from approximately 30% to 10%. The amount of recent rainfall and length of growing season will vary the percent of moisture considerably, however, and some seasons require much more extensive drying operations than others. The water used in the washing process also adds to the amount of moisture which must be removed.



Top bin of the dryer into which nuts are first loaded. After approximately 10 hours in this bin, the nuts drop through trap doors into the middle compartment.



Nuts are loaded onto conveyor belt and carried to top of the dryer building. They are washed in a water spray bath under the floor (right) before being loaded.

Temperature in the dryer is controlled by a thermostat mounted in the hot air duct leading from the fan housing into the chamber under the bottom tier of bins. A Partlow control valve regulates the amount of gas to the four burners, and temperature at the thermostat, 5 ft from the fan outlet, is maintained at 100° F.

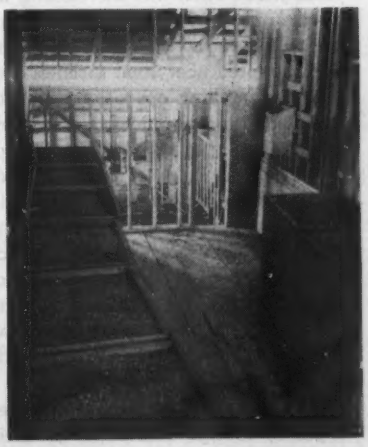
Steady Temperature

Each hour 1.5 million cu ft of air is heated and blown through the 28 tons of nuts. It is very important that this volume of air be maintained at an even temperature as overheating results in cooking the oil in the nuts and a consequent rancid taste. A steady temperature has been much easier to maintain in the propane-fired dryer than in the oil-burning unit. Because of the brick gridwork heat transfer surface employed in the latter, fluctuations in temperature may not be compensated for as rapidly as in the direct-fired installations. LPG is one of the two fuels that may be used in direct-fired applications of this type where flavor and sightliness of the product being processed are important.

Completely Automatic

Fully automatic operation with complete safety is provided by the propane-fired dryer. Precise and automatic temperature control is maintained by the control valve which continuously provides the proper flame necessary to heat the air to precisely 100° regardless of changes in outside temperature. Complete safety of operation is assured by use of a thermocouple in the pilot burner and an air-vane switch in the tunnel outlet from the fan. Either pilot outage or interruption of air flow from the fan (broken fan belt or bearing freeze) will automatically shut off gas flow to burners and pilot.

The nut-drying season is in the fall of the year and generally lasts about eight weeks. During this time approximately 300 gal. of propane are consumed each day. To supply this fuel demand, Multnomah Fuel Co. installed a 1000-gal. tank and two 500-gal. tanks which are serviced regularly from Portland.



Tubs of dried filbert nuts await shipment from Hudson House. Dried nuts have crisp texture and improved flavor.

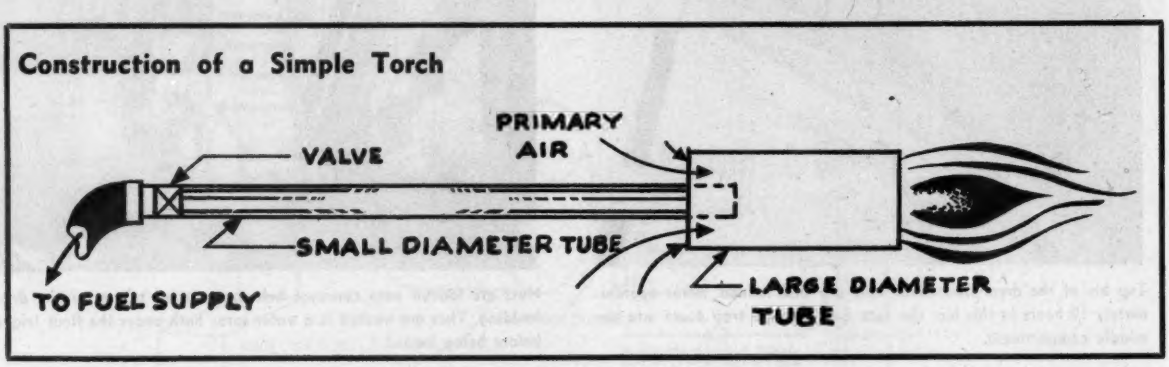
Quick and Reliable

Drying with propane is quick and to date has been completely trouble-free. Costly breakdowns have occurred with the relatively complicated oil installation in the past, and precious drying time lost. The installation of additional automatic controls to reduce the consumption of propane is being considered. It has been suggested that a hygrometer unit, measuring the amount of moisture in the exhaust air, be used to maintain the drying level of the air at that point where drying efficiency is the highest. Beyond this point the cost of the operation rises needlessly. Air inlet control flues at the bottom of the bins, actuated by the hygrometer, would allow passage of only that volume of air that would efficiently dehumidify. Propane consumption per batch of nuts would thereby be reduced.

Hudson House's dryer is only one of several in the area. Other nut growers are realizing that propane may be efficiently and economically used and are investigating similar installations. As more highly efficient systems are engineered it is expected that the majority of growers in the Dundee area will turn to propane. ■

PART 5

KNOW YOUR INDUSTRIAL MARKETS



Wherever Metal Working is Done, There is a Place for the LPG Torch

The uses and applications of torches are so widespread that every LPG dealer or distributor can find customers or potential customers through their use. In the March issue of BUTANE-PROPANE News *(page 47), Carl Abell presented a thorough picture of one torch use in his article on flaming for agricultural purposes.*

To show how vast torch application is, a number of uses will be listed with details on several applications described. A discussion of several types of torches and the manufacturers who produce them will be included. Most of the torches that will be discussed are portable and are hand guided, operated, and controlled. A few torches which are machine mounted and mechanically or electrically controlled are also mentioned. These torches range from relatively simple tools to very precise instruments in which both LPG fuel and oxygen for combustion are carefully metered.

By John C. Abram

ONE of the first large scale commercial uses of liquefied petroleum gas, even before it was widely used as domestic fuel, was the cutting up of a number of obsolete battleships in San Francisco Bay. This was done with adapted acetylene torches, and this and similar operations on not quite such a magnificent scale were the beginning of the development of an extensive range of techniques of using LPG in the working and treatment of metals. These developments have led to the design and production of numerous styles and sizes of torches, with applications ranging from heavy foundry and machine shop work through village junk yards to farm maintenance equipment.

Let's take a look at the simpler types of torches and some of their many applications. The article on flaming is a good example of the use of simple torches. One of the simplest designs for a torch would involve a long small-diameter tube which would serve as the body of the torch and the burner orifice, fitting into a short length of larger diameter pipe, which would serve as the burner head. Primary air would be inspirated at the rear of the larger pipe to obtain better combustion than that developed with raw fuel. In the better designs of this simple type of torch temperatures of 2200° to 2450° F are developed.

These simple torches are found in dozens of designs, some of which use a venturi for more precise proportioning of air to gas. These torches can be used with either direct tank pressure or with regulators. A variety of gas controls are incorporated in these tools with needle or ball types of valves most common. Valves are generally located at the torch handle for easy control by the oper-

ator. One torch has a built-in pilot light and a trigger-type valve handle which allows the operator to vary the flame as required with continuous operation.

It would be impossible to list all of the uses of these simple torches, but some include singeing hogs, poultry and various hides, burning paint, preheating pipe for welding or caulking, cleaning metal parts for painting, cleaning floors for the replacement of asphalt tile, lead burning, soldering and brazing, and pipe bending and thawing. These uses are but a few of the many jobs requiring the application of heat which are done with torches.

Some of the companies that build and sell torches for these applications are Mutual Liquid Gas & Equipment Co., Gardena, Calif.; Ransome Co., Emeryville, Calif.; and Johnson Gas Appliance Co., Cedar Rapids, Iowa.

Mutual, as an example, builds a tool which is a combination scraper and torch. It is constructed so that only one hand is required to operate it. This tool is advertised as being able to remove more paint per man hour of operation than any other patented paint scraper on the market. This scraper-torch weighs about 1½ lb, is about 16 in. long overall, has a 3-in. wide blade and throws a 5-in. long flame.

Several of these companies make soldering torches which require only one to three minutes heating time to reach working temperatures. The burners inside these irons can be adjusted for various settings to allow continuous work. These soldering irons are extremely popular with sheetmetal men, electricians, plumbers, and maintenance men.

Ransome also makes a line of utility torches which can be used for soldering, lead wiping, and similar work. Five different torch tips give flame variations of 4, 6, and 8 in. in length and widths from about 1 in. down to a needle point.

Mutual also manufactures a portable hand torch assembly which combines the fuel container and the burner in one unit. This portable torch can be carried by plumbers, sheetmetal men, and other service men to locations where more bulky equipment or that requiring long hose connections would be impractical or extremely expensive and time consuming.

Preheating for welding is one of the applications using torches which was mentioned earlier. This operation has become a well recognized preventative against cracking. One of the biggest problems in the welding process is this cracking of the base metal or in the weld itself. These failures develop because of uneven stresses set up by rapid heating from the welding torch and rapid cooling on its removal from the welding area. When preheating is done, a relatively large mass of the metal is heated to a range of 400° to 700° F before the actual welding takes place. This preheating tends to reduce the stress build-ups and eliminate distortions and resulting cracks.

In a number of cases where ferrous welding is done using oxyacetylene fusion welding, this fuel has been used to do the preheating. Because of the extremely high cost of acetylene, here is a very good application where LPG can do an equally good job with a great economic advantage. Since acetylene costs run from two to seven or eight times that of LPG it should be easy to convince the welder now preheating with his welding fuel that L. P. gas would be more practical.

There are several other preheating advantages also, one of which is that liquefied petroleum gases do not have to be mixed with oxygen to do a good preheating job, as does acetylene. A further reduction of cost would result. Another advantage of LPG over acetylene is that of safety. The explosive range of acetylene is between 2½% and 80% concentration in air. The combustible range of LPG is between 1½% and 9½% in air. It is almost impossible to "pop" an LPG torch while "popping" or burning back inside the torch is a real problem with oxyacetylene mixtures.

Most of the manufacturers who sell oxyacetylene torch equipment also sell special torch-tips for propane and butane preheating, cutting, and scarfing (a surface treatment of ferrous material which removes defects; the torch is held at an angle to the surface with the flame playing across the metal). Some of the companies handling this type of equipment are the Air Reduction Co. Inc., the Harris Calorific Co., Linde Air Products Co., and the Victor Welding Equipment Co.

The torches sold by those companies for welding and cutting are known as blow pipes and are generally of the two- or three-tube types. In the two-tube type the L. P. gas is supplied through one tube



Example of the type of tank that is connected with a torch.

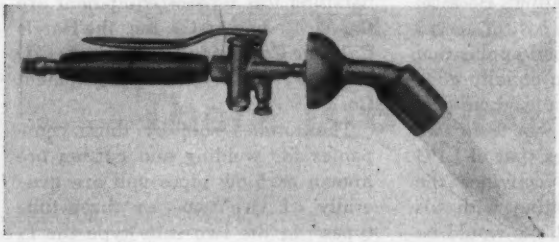
and the oxygen through the other. These two gases are then properly proportioned and mixed in the torch head for the type of flame desired. The third tube is added on some cutting torches to supply oxygen. These torches are made with precise machining and assembly based upon excellent engineering. A number of varying designs of proportioning mechanisms are employed in these torches, but basically most of them employ some form of automatic proportioning through the use of the injector principle.

Where fusion welding of steel, cast iron, or other ferrous alloys to similar metals is to be done, the use of acetylene is almost a necessity because of its high flame temperature and the protective atmosphere it creates about the point of the welding operation. There are many applications of torches, however, where the L. P. gases do a better and more economical job. Some of these jobs are flame cutting, preheating as mentioned before, soft soldering, brazing.

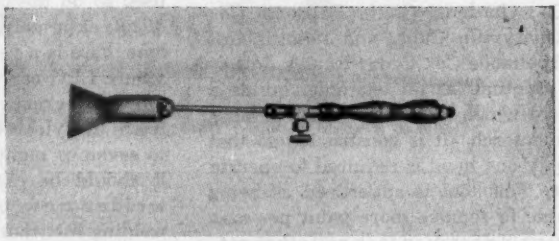
Of the many uses for propane torches, the one which has become most widespread, and which offers a local market for fuel in almost every community, is the cutting of metal, particularly steel. This cutting goes on in almost every community, in structural steel plants, foundries, machine shops, and boiler factories, and wherever else steel is fabricated, welded, or scrapped.

Even before butane and propane found extensive use as domestic fuel, they were marketed in quantity for the cutting of metal in the steel plants around Pittsburgh. The principal uses in those days were the cutting of sheets and rolled forms, and the trimming of flash from the billets. During the period between 1925 and 1930, when domestic use was first coming into prominence, Standard Oil Co. of California was developing extensive industrial markets for the LPG products on the Pacific Coast. One of the earliest and largest operations that they supplied was the scrapping of a number of obsolete battleships. Butane, and later propane, were used to cut the armor plate into portable sizes. The plates ranged up to 14 in. in thickness. They also supplied propane for cutting up the steel portions of an enormous cement mill which was being dismantled. Their fuel was used during that period in rough-cutting the shapes for heavy marine diesel crankshafts from billets of steel up to 24 in. in diameter.

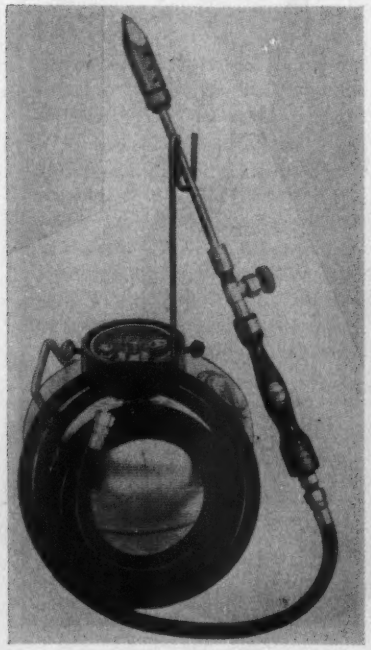
These early developments established a firm economic base under the use of propane as a cutting fuel, but a certain amount of misunderstanding persists in regard to the facts. This is largely due to competitive pressure by the manufacturers of other cutting fuels, and also partly because of the fact that propane is not as satisfactory a fuel for welding as is acetylene. However, as a cutting fuel propane has several distinct advantages. This has been established by both laboratory tests and by very extensive experience. The points definitely established under comparable conditions are (1) fuel costs are less with propane; (2) oxygen costs are less with propane; (3) cylinder costs are less with propane; (4) and cutting is faster and more satisfactory with propane.



Paint burning torch equipped with trigger handle. When trigger is released a small pilot flame continues to burn, thus eliminating the necessity of constant relighting.

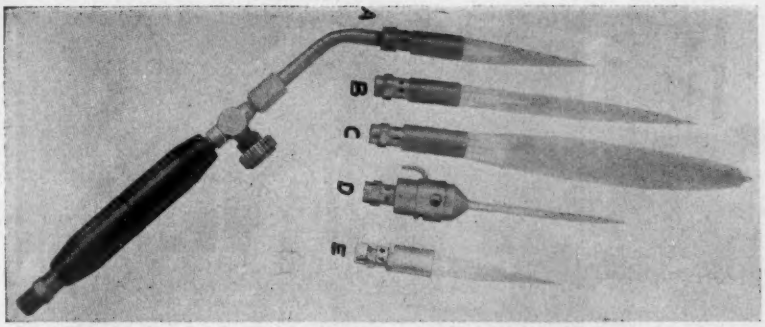


Paint burner and scraper combination. This tool will both burn and remove paint and is constructed so that only one hand is used for the two operations.



A soldering iron, ICC cylinder, and high-pressure hose make up this soldering system. Hand valve adjusts flame to maintain working temperature for continuous line soldering.

LPG is particularly adaptable to flame cutting operations. In this process the ferrous metal to be cut is preheated to its ignition temperature and then a controlled stream of oxygen containing a slight amount of fuel is directed by the cutting torch through the metal. A chemical reaction takes place producing a black iron oxide in the form of a brittle powder. The cut made in the metal is known as a "kerf" and usually has smooth parallel walls. In preheating, the steel or cast iron is usually heated to a bright red color, a temperature of about 1400° to 1600° F before the final cutting begins. Some of the advantages of LPG over acetylene are the lower tendency to harden the edges of the metal cut, a lower amount of slagging on the edges cut with less of an adherence to the edges of the slag that does form. These advantages result in



Only a few minutes are required to change heads on this soldering torch. Heads include those which: (A) throw a 4-in. flame, used in soldering; (B) throw a 6-in. flame, used for soldering heavy wires and copper tubing; (C) throw an 8-in. flame used on lead conduit work and wiping; (D) throw a 4-in. flame, used for narrow area or small work; and (E) throw a 4-in. flame similar to first head but with a larger capacity for work with small fittings.

easier chipping and less grinding to clean up the cuts, and a further savings in production costs.

In these torches either acetylene or propane or butane are mixed with oxygen to obtain higher flame temperatures for preheating. It has been claimed that LPG fuels require a much greater amount of oxygen for proper operation. About 10 to 15% more oxygen is required for LPG than for acetylene for an equal amount of heat output. Secondary air can supply some of this oxygen, but even disregarding this, the lower cost of LPG over acetylene far offsets the increase in oxygen costs. Additional advantages of the LPG fuels are that the flame color is easier on the workmen's eyes, there is no sooting from LPG, and cylinder handling costs and number of changes of cylinders are greatly reduced.

Manually guided flame cutting can be done on ferrous metals with success for thicknesses up to 2 ft. In order to do more precise cutting, complex mechanical setups have been made to employ a number of torches which will operate in an exact predetermined path. This mechanization allows the production of a number of identical shapes at one setting. Circle cutting is a very common operation which has been mechanized. Most of the torch manufacturers have simple circle burner attachments which allow circles from 2½ in. on up to 60 in. in diameter to be cut.

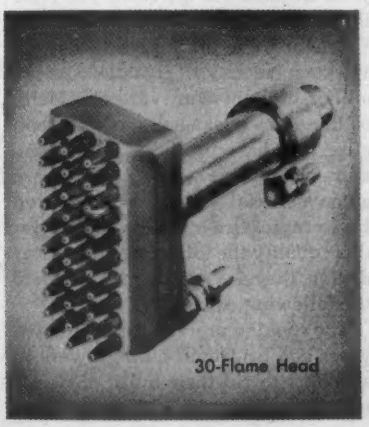
Brazing is another method of joining metals which is quite widely used. In brazing the joining or filler metal has a lower melting temperature than the metals being joined. The joining is not a true fusion but primarily a metal-to-metal bond with good strength. In most cases bronze rods are used as the filler metal. In gas brazing the edges of the metal to be joined are heated until they are red, using a blow-pipe type of torch. When the metals are at the proper temperature the filler metal will bond with the base metals to form a strong joint. Because of the lower temperature required for brazing compared to welding, oxy-LPG torches are generally applicable.

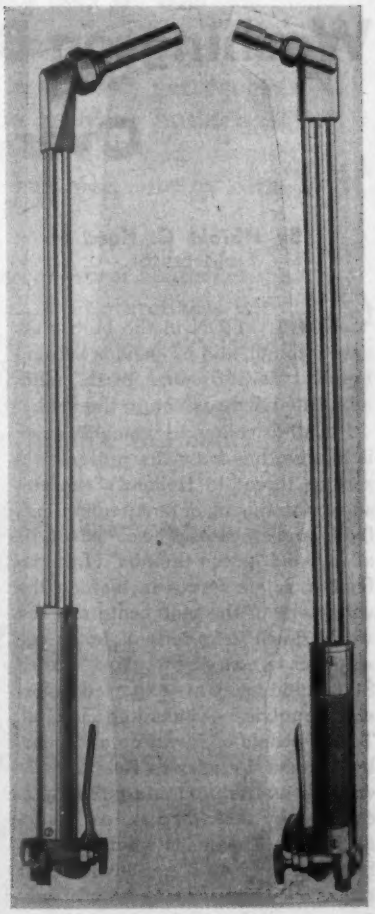
Another popular brazing alloy is silver solder which has melting temperatures in the range of 1200° to 1800° F. This method of joining metal parts is more expensive because of the silver, but it is relatively common, particularly on small parts. In this case, care must be taken to produce reducing flame which is broad rather than pointed for best results.

An as example of how fancy torches can become, the Cincinnati Milling Machine Co. has developed an electrically controlled machine known as the "Flamatic," which can be adapted to flame hardening, brazing and heat processing. This machine uses acetylene, butane, propane, natural or manufactured gas with oxygen to do automatically, through torches, what good mechanics and metallurgists have been trying to do manually for years. These machines have better, more precise control. They are multiflame torches which are directed on the metal parts to do the job required.

Not very many LPG distributors will have the opportunity to supply fuel for these highly complicated machines, but the ordinary uses of the simple hand-held torches will be found in almost every community, and in some agricultural areas on practically every mechanized farm. ■

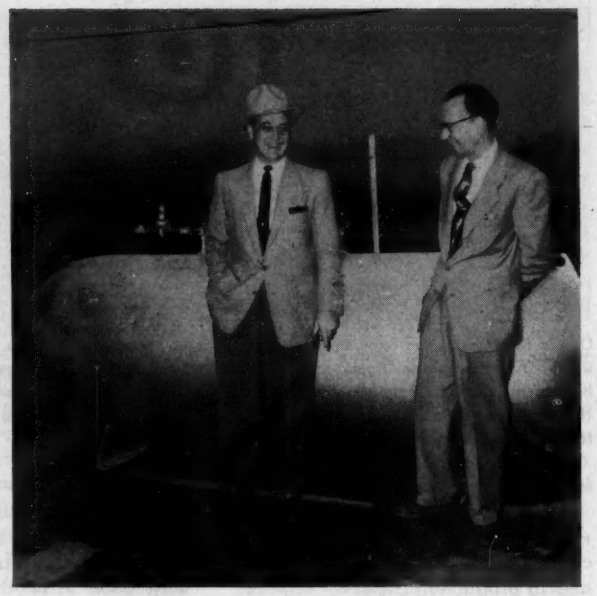
Below: A 30-flame head will harden almost any flat or round surface and can be used on pieces of metal with irregular profiles by means of different length tips. Right: Scarfing torches used to remove defects from the surface of ferrous metals.







Motor-operated elevator above bulb tank raises and lowers bulbs for sterilizing. Upper ends of the burners are visible above the level of the elevator floor at enclosed end. Tank extends 9 ft below ground.



Everyone concerned, including Cleve A. Redig (left) and Bill Davison of Valley Propane, is pleased with the new bulb cooker at the Korsten bulb farm in Sumner, Wash. A 500-gal. tank stores propane.

Washington Bulb Farmer Enthusiastic Over Propane-Fired Bulb Sterilizers

By Harold C. Hood
Field Editor

A special propane-fired cooking increases the yield and betters the quality of many varieties of flower bulbs for Ben Korsten of Sumner, Wash. Its ease of control and ability to maintain a steady heat make LPG the ideal fuel for bulb sterilizing.

COMPETITION in the bulb business is tough, and propane is helping Ben Korsten of Sumner, Wash., maintain his envied position in the field.

Puyallup valley, in which Sumner is located, has for years presented a serious threat to Holland's supremacy in the raising of fancy tulips, daffodils, and crocuses. The climate, type of soil, and "green thumbs" of the inhabitants join forces in making the valley one of the bulb centers of the world. Each year tons of bulbs are shipped throughout the United States, and many are exported to foreign countries — including Holland. To the people of Puyallup and nearby Tacoma, Pasadena's Rose Parade with all its tradition and publicity is dwarfed by their own annual Daffodil Parade. The queen whom they select and send on a nationwide tour reigns over just as many faithful subjects as does the queen of the Rose Parade.

One of these faithful subjects, Mr. Korsten, each year handles over 2 million bulbs of many varieties. Many of these are packaged and sold soon after they have been dug in the summer, and the remaining ones are given a special propane-fired cooking to increase their yield and better their quality the following year. After drying, they are replanted and bloom the following April.

The cooking process was originated years ago by Dutch bulb growers in an effort to rid their bulbs of nematodes, small worms with large appetites which bore into bulbs and eventually kill them. If permitted to multiply without restraint, these tiny pests accounted for tons of bulbs unfit for sale in a single season. By careful experimenting, the patient Hollanders learned that by heating the bulbs to exactly 110° F and maintaining this temperature for about four hours, the nematodes were destroyed.

Soon after development of the process as a cure for nematode annoyance, it was learned that an extra, unexpected dividend accompanied the bulb cooking practice. Tulips and daffodils that had received the treatment in the summer shot up the fol-



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lowing spring with more healthy, sturdier shoots than their untreated neighbors, and produced more luxurious blooms than ordinarily. The hot water treatment, by some mysterious botanical quirk, accelerated the rate of germination and stimulated the ensuing growth of the bulb. It also caused the formation of more compact, firmer bulbs and reduced the number of price-lowering loose slabs.

Buyers Like Them Cooked

The bulb products of growers who had not accepted the practice of bulb cooking became less favored by the buyers, and competition soon forced all who wished to maintain their position in the market to install a bulb cooking device of one type or another.

The process has evolved until today, in this country as well as in Holland, every successful grower has fashioned some sort of bulb cooker. Some of these operate on wood, some on oil, and some of those owned by more progressive growers, on LPG.

Two additional benefits resulting from the process have been discovered and capitalized upon almost universally. First, by adding small amounts of formaldehyde to the tank water, "root action" was greatly aided. This term and the action to which it refers are rather nebulous to the layman, but horticulturists explain that the expression refers to the strength and penetrating power of the roots which the bulb sends deep into the ground, and the ability of these roots to seek out moisture for the growth of the plant.

Secondly, it was discovered that the addition of heptachlor to the bath greatly helped in controlling the spread of the dreaded bulb fly. This pest is very fond of tulip and daffodil bulbs for egg-laying, and the larvae which hatch can be as damaging to a crop of bulbs as the once-feared nematode.

The evolution of the cooking process has proven a great boon to the bulb industry. It is, however, a very critical operation. Experience shows that 110½° F is the optimum water temperature which may be used, and this must be maintained with very little variance. If the temperature drops below this point, the stimulating and sterilizing effects are lost. Temperatures of 112° or 113° F destroy the power of the bulbs to germinate and render them useless.

It is because of this very narrow allowable temperature range that LPG is so well adapted to the process. Its ease of control and ability to maintain a steady heat make it the ideal fuel. Also, because of the simplicity of the equipment required, LPG installations are much less expensive initially than the corresponding wood- and oil-burning units used elsewhere in the Puyallup valley. Most of these latter depend upon steam as a medium for transferring heat from the

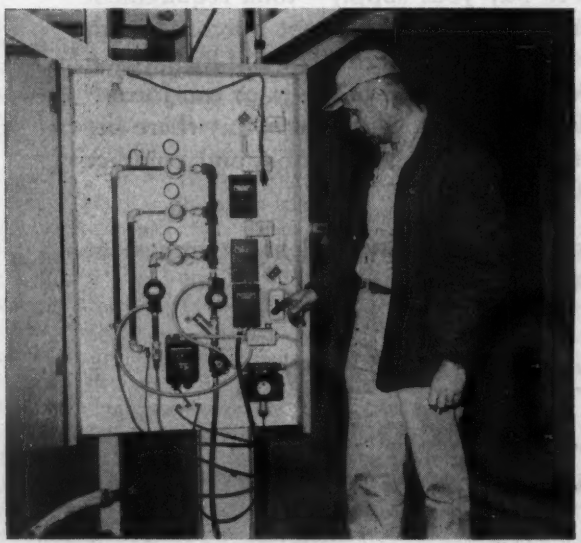
BPN staff report

combustion chamber to the bulb bath, and consequently call for the installation of expensive boilers and piping.

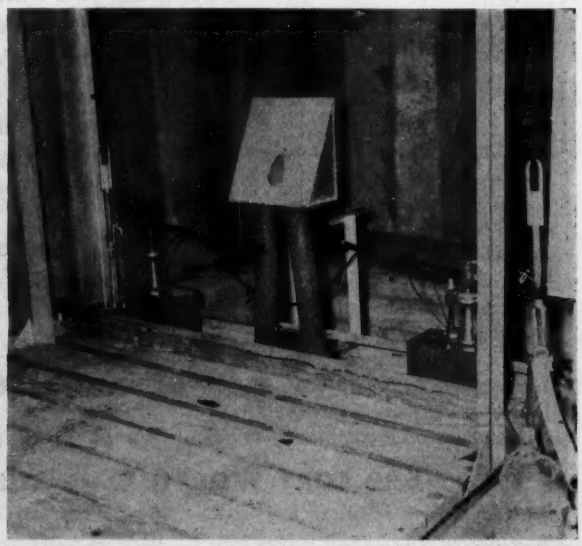
Ben Korsten's tank is comparatively simple and trouble-free. Installed in July, 1954, it was used to cook 20 batches of bulbs last fall, and has won the respect of all bulbmen who have observed it in action. Bill Davison and Newell Skinner, employes of Valley Propane Co. of Puyallup, were largely responsible for the engineering and successful installation of the unit. Propane for the operation is delivered by Valley and stored on the spot in a 500-gal. bulk tank.

Tank In the Ground

Made of concrete, the bulb tank is built into the ground, its top flush with the ground. Depth of the tank is approximately 9 ft and its capacity is 4500 gal. of water. A motor-operated elevator, platform space of which is the same as the cross-section of the tank, raises and lowers the trays in which the bulbs to be treated are placed. The elevator is large enough to handle 240 trays—24 stacks of 10 each. Depending upon the size of the bulbs, each tray will contain from 75 to 300. When the elevator is fully loaded, it is slowly lowered into the

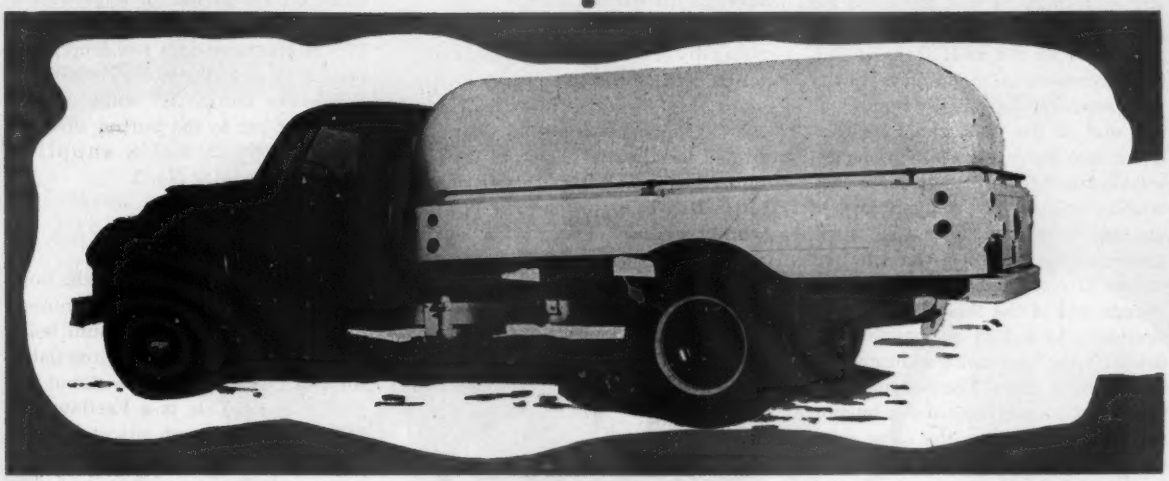


Van Zonneveld points out the three pressure regulators and controller used for bulb sterilizer. Control panel is mounted on upright supporting the elevator structure.



Propane burners are mounted vertically in sheetmetal housings extending into the bath. Exhaust end of the U tubes are seen between burners. Suction fan motor has been removed for winter.

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water-filled tank and left for a period of four hours. During this entire time the temperature is held at 110½° F with maximum plus and minus tolerances of two-tenths of a degree. A bulb-filled tray, before soaking, weighs about 40 pounds.

Heating elements of the tank consist essentially of two Ransome B-3 burners and two U-shaped tubes which act as the heat transfer surfaces. Burners are mounted vertically in sheetmetal housings mounted on one end of the tank and extending down into the water. A 4-in. copper tube is attached to the bottom of each housing and extends to the bottom of the tank where it makes a 90° turn, traverses the length of the tank, reverses direction and returns to the burner end of the tank. It then rises vertically to a duct and suction fan driven by a 1-hp motor mounted between the burners. The fan sucks the flame and hot products of combustion through the tubes in the same manner as the draft fan on a fire-tube boiler. Turning at 1400 rpm, the 12-in. blade creates sufficient draft to take care of the two burners when operating at maximum gas pressure.

The burner was mounted close to the bottom of the combustion chamber to insure that all flame would be drawn into the tube, and that no portion of it flashed back into the chamber. The velocity of the air moving through the tube materially assisted in drawing the flame into the tube.

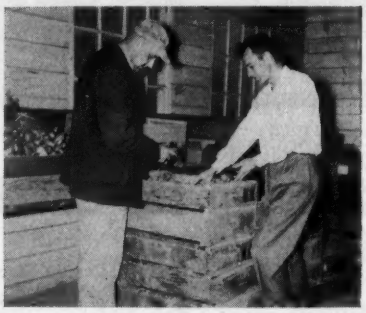
Due to vibration set up in the movement of the air column, it was necessary to install shutters on the open end of the combustion chamber to prevent chattering of the flame. The position of the shutter is partially determined by the amount of air entering the burner through the damper, although it has been found that one position of the shutters works quite satisfactorily for all gas pressures used.

Displacement Pump

The first few times the burners were used to heat water at 45° to 50° F it was discovered that water of combustion collected too quickly in the tubes to be swept out as vapor entrained in the air. Sufficient water accumulated in the tubes to stop the passage of air and in the course of time the flame was extinguished. To overcome this difficulty a small positive displacement pump was installed to draw the trapped water out through a length of copper tubing. It is only at these lower temperatures that sufficient water of combustion forms to create a problem, however. After tank temperature has reached 70° F no difficulty is encountered in vaporizing the water and drawing it out through the suction duct.

One of the Ransome burners is manually controlled, and is used only for bringing the bath up to heat when operations are begun in the morning. The other is thermostatically controlled, and while it also is used in initially bringing the 4500 gal. of water to 110° F, its primary function is maintaining the water at a steady temperature during the time the bulbs are being processed.

Three regulators and a Partlow controller are used in conjunction with the automatically controlled burner. Perhaps the simplest means of describing the function of each of these is to relate the sequence of events followed in bringing cold water into the tank to heat as quickly as possible in the morning. First, a manual override switch which bypasses the Partlow controller is closed. This permits gas to be supplied to each of the regulators at tank pressure. Regulator No. 1, controlling pilot pressure, may be set for any pressure from 5 to 45 lb. The pilot burner is then ignited by means of an electric spark igniter and when it has warmed up sufficiently for the Partlow controller to close the circuit, the manual override switch is opened. Regulator No. 2, with the tank-mounted thermostat calling for heat, is adjusted for maximum pressure of 45 lb and supplies gas to the automatic burner which lights from the flame of the pilot burner. The manual burner is ignited by an electric spark and remains in operation until water in the tank is within 1/10 of a degree of desired holding temperature. It is then shut off and regulator No. 2 is reduced to 5 lb pressure. Regulator No. 3 is set at a pressure just sufficient to maintain a flame on the burner, or to provide a rate of cooling such that the temperature in the tank does not drop more than 2/10 of a degree in 15 minutes. When the thermostat shuts off the supply of gas to the burner through regulator No. 2, fuel is supplied through regulator No. 3.



Superintendent Van Zonneveld (left) helps sort bulbs, which have been cooked and dried, for packaging and replanting. More than 2 million bulbs are handled each year.

Adjust Flame

After continued operation the tank loses very little heat to the surrounding ground and the minimum holding flame supplied through regulator No. 3 can be supplanted by use of the pilot burner. This is a Partlow No. 347, which utilizes an adjustable orifice making possible considerable adjustment in the size of the pilot burner flame without adjusting the pressure. Maximum cooling rate of 2/10 of a degree in 15 minutes was maintained with no difficulty.

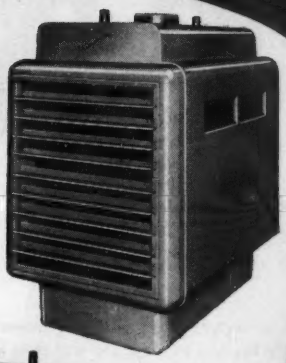
The utilization of multiple gas burners in the manner described above permits reaching the desired tank temperature in a very short time. Starting with water at 45° to 50° F, this interval is about three and a half hours. This arrangement also allows for a very slow rate of cooling and of heating, making it possible to maintain a precise temperature without excess fluctuation due to overshooting and undershooting. Temperatures with a tolerance of plus or minus 2/10 of a degree are easily held.

Bulbs receive the cooking treatment only once every three years. It has been found by years of experimenting that the maximum stimulation and most effective protection against insects are thereby achieved. Each year one-third of the more than 2 million bulbs dug are lowered into the hot water bath.

As for cost of operation, Van Zonneveld, superintendent of the Korsten operation, estimates that, considering all economies realized, LPG costs about half as much as oil to process a batch of bulbs. Only slightly over 500 gal. of propane were used last year, and the job was done quickly and cleanly. ■

Year after Year . . .

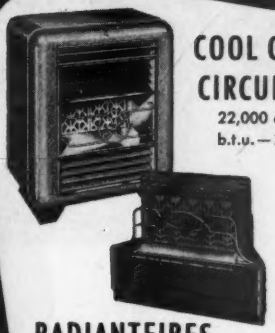
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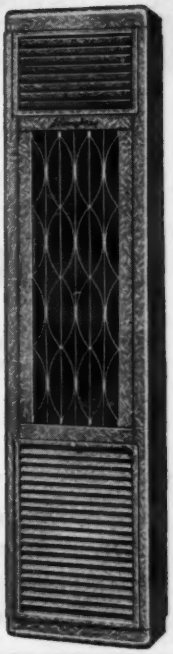


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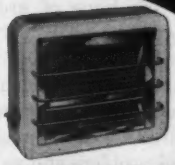
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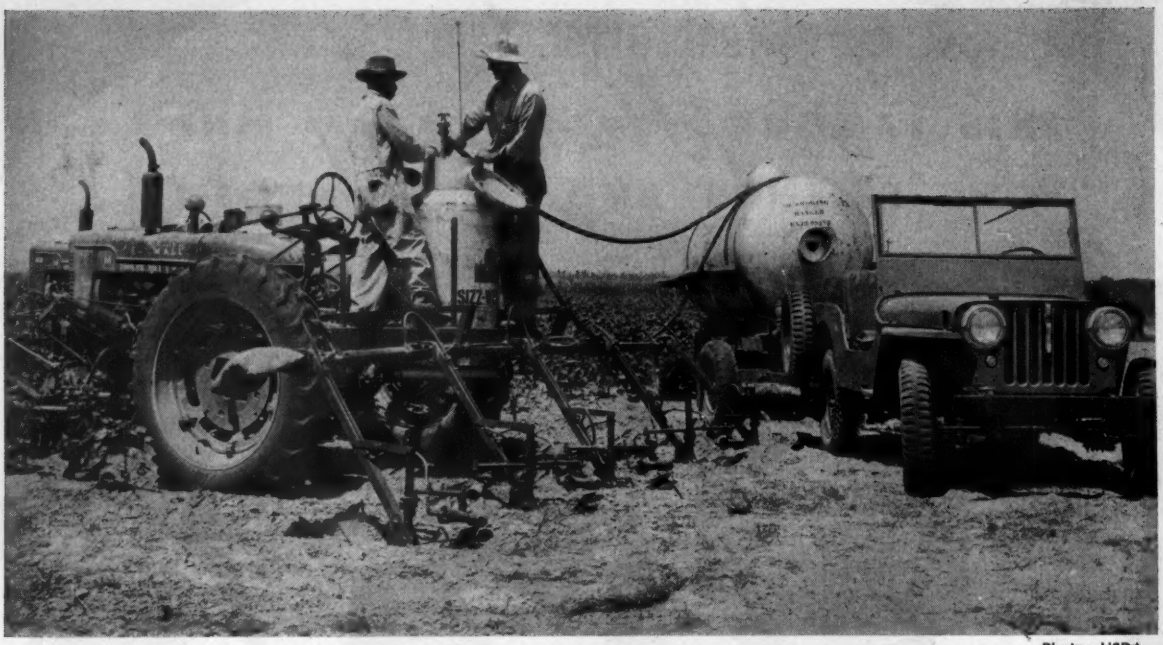


Photo: USDA

Although converted to L.P. gas, these flamers use the round nozzle. This nozzle has now been discarded in favor of the flat nozzle, which is less likely to damage cotton plants.

South Sees Increased Usage of L.P. Gas for Cotton Cultivation

By David Brown

"Liquefied petroleum gas, used to fire the flame cultivator, is becoming increasingly important in the South as a weapon in overcoming the weed problem and as a booster to mechanization."

KEEPING weeds and grass out of cotton is one of the principal bottlenecks to the complete mechanization of cotton agriculture, and mechanization is the big hope of growers in keeping cotton competitive with other textiles. Liquefied petroleum gas, used to fire the flame cultivator, is becoming increasingly important in the South as a weapon in overcoming the weed problem and as a booster to mechanization. Flame cultivation with L. P. gas is also proving an economical boon to southern cotton planters.

Over the past dozen years since the flame cultivator was first developed, this mechanized control of weeds and grass has been slow to be accepted on a wide scale in spite of its advantages. But where it has been used, the planters are enthusiastic.

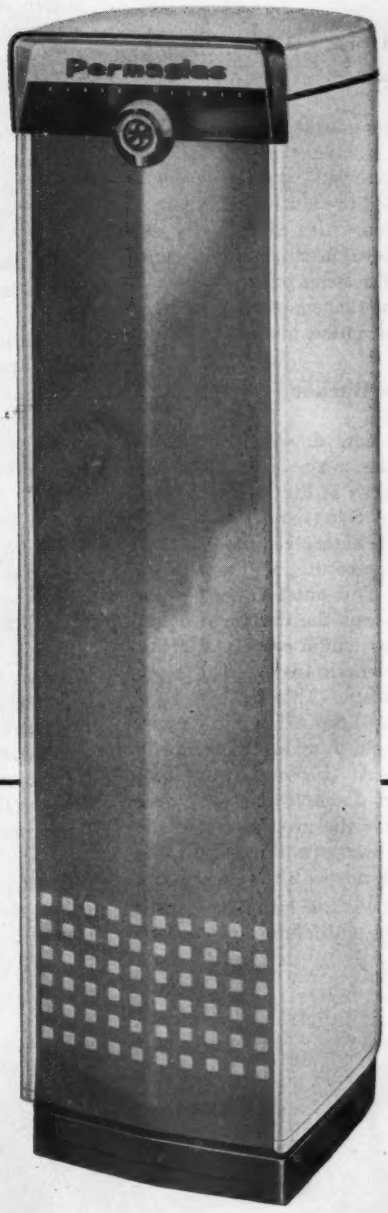
Today more and more cheap farm labor is leaving the cotton fields. Imported labor is more expensive. And farmers are seeking methods other than the conventional hand-chopping of weeds and grass down the cotton rows. This is where the LPG flame cultivator can enter the picture.

The first flame cultivator was built and used in 1943. Early flame cultivators were cumbersome and often so heavy that fields had to be fairly dry to keep equipment from bogging down. A succession of rains could keep the weeds and grass growing and at the same time keep the flame cultivator out of the fields. This, along with the fact that the cultivator had to be used only on level ground, hampered early adoption of the cultivator by many farmers. Also, fuel was expensive.

In 1945, liquefied petroleum gas was introduced as an inexpensive and efficient fuel for flame cultivation by agricultural extension scientists at the Louisiana Experiment Station. Following this development, the tractor-mounted equipment was greatly simplified and reduced in weight. Very wet and soggy fields still hamper the flame cultivator, but today's model is a great deal more agile than early versions.

The wide interest that developed





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BPN field report

in the flame cultivator between 1943 and 1946 suddenly began to wane when unfavorable weather conditions limited the cultivator's use and effectiveness. Also many early cultivators were in disrepute because their round nozzles put out a concentrated flame that sometimes damaged the smaller cotton plants.

Flat-Type Burner

In 1948 new developments were made in the machine and in the burner design at the Delta Branch Experiment Station at Stoneville, Miss., after extensive experimental work by one of the farm machinery companies. One outstanding new development was the design of a flat-type burner which employed a flat-type spray nozzle instead of the former round one. This burner produced a broad flat flame and was set at a 45° angle to make it practically fool-proof. At this angle, the relatively short flame tends to displace cold air near the ground so that no convection currents are set up and the flame is not so likely to bounce.

By 1949, new interest was apparent in the flame cultivator, spurred by better equipment, lower fuel costs and continued labor shortages.

Recently the flame cultivator has been used primarily as a complement to other weed control measures. It has been used in combination with chemical weed control, cross cultivation and other mechanical methods. With the rapid increase in mechanical harvesting, it has proved particularly useful in late season control which is so essential for machine picking. It has also proved adaptable to weeding corn, sugar cane and similar crops which have a high resistance to flame.

A new burner has just been developed, which, it is hoped, can be used for even younger cotton as it reaches about 4 in. in height, but this is still in the experimental stages.

The flame cultivator normally consists of a high-pressure tank for L. P. gas, a regulator, vaporizer, burners, fuel lines, fittings, beams and burner skids. It is often used in combination with a standard sweep cultivator. This not only eliminates an extra trip through the field, but assures proper application of the flame since the tractor operator is concerned with keeping the sweep cultivator carefully aligned on the row.

A front-mounted cultivator and rear-mounted flame machine can improve tractor balance and facilitate steering. Modern flame cultivators are provided with fool-proof methods of setting and require little attention after they are once adjusted.

The pressure tank for tractor fuel in the most up-to-date model is mounted on front of the tractor with the tank for the flame equipment mounted on the rear. The same tank may not be used for both purposes.

Two burners are required per row, and are mounted in a staggered position so that flames from opposite sides of the row will not meet and deflect into the plant.

Young Vegetation

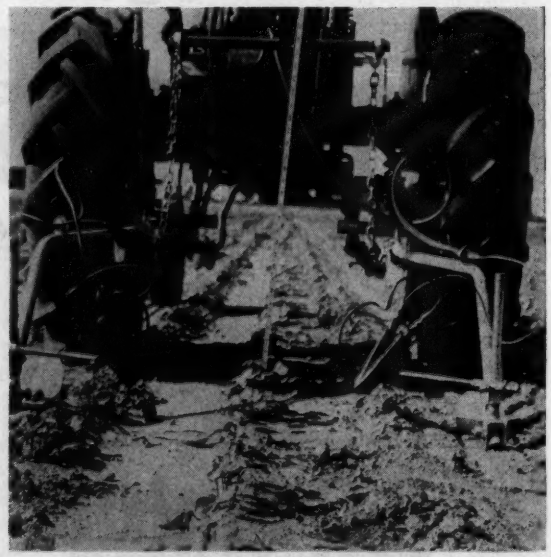
Low smooth rows are desirable for best results with flame units; clods of dirt can cause the flame to be thrown into the plant's upper foliage and seriously damage the plants. This means a farmer must adapt his methods of farming to flame cultivation if he is to be successful.

Also if the grass and weeds are allowed to grow too large, the flame will not be so effective. It works best on young and tender vegetation, and if the weeds and grass are as large as the cultivated crop itself, the farmer may be disappointed with the results.

The best schedule is to burn when cotton plants first grow tall enough to resist flames (with present model flamers, about 8 in. high) and then



This experimental model of a small-size flame cultivator burner was developed at the Delta Experiment Station in Stoneville in 1954. It is designed for use on very young cotton which is not over 4 in. tall.



The flame cultivator is a valuable aid to the cotton farmer when it is wisely used. An experimental four-row flame cultivator with flat burners is used in cotton at the Delta Experiment Station, Stoneville.



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to re-burn later before the dying grass has time to dry.

It is important to employ a careful and experienced operator on the flame cultivator, one who can gauge the proper operating speed for maximum effect against weeds and grass and minimum damage to the cotton, while taking into consideration the amount of grass there is to be destroyed and how damp it might be.

Just how does this new-type flame cultivation affect the economy of mechanized cotton agriculture?

The top price for cotton chopping labor in 1953 was about $7 a day. The next year was a dry one so there was less infestation, smaller labor demand and consequently a lower cost, down to $3 a day. Let's compare the cost of weed control in cotton per acre by conventional hand labor with control by modern mechanized methods.

The most effective method divised at the experiment station at Stoneville, Miss., was a combination of chemical and flame control.

In 1950, the scientists there showed, after careful study, that conventional hand-chopping cost the planter an average $15.38 per acre (including both wet and dry years). The cost of using herbicidal oils early in the planting season and following with flaming when the cotton plants grew big enough, cost only $12.44 per acre, including labor, materials, power and equipment. To a man with 500 acres of cotton, the saving of almost $1500 is not to be taken lightly.

E. B. Williamson, agricultural engineer with the U. S. Department of Agriculture at Stoneville, says that the flame cultivator is no "cure-all" but is effective once the cotton has grown to about 8 in. Prior to that the herbicidal oil can be put down, fortunately with the same equipment. Spray nozzles are substituted for the flame burners, a tank full of herbicide for a tank of L.P. gas.

"Flame cultivation has its ups and downs, and still some limitations, but I strongly believe in it," Mr. Williamson says.

L.P. gas is put to use in two ways to help with this mechanized weed control. It operates the tractor, and it furnishes fuel for the cultivator. A successful Mississippi Delta planter, Don Baker of the Baker Land Co., Leland, uses L.P. gas for both. (See BPN, Feb., 1955, page 137.) He has flame cultivators on his plantation and has been using them since 1947.

"They are best to use during a wet summer," he says, "after the cotton is between 8 to 10 in. high. Then the woody bark is tough enough to resist the flame which burns grass and weeds.

"When grass is coming up fast and thick, we use flaming every five or six days, with a few hand-choppers following to clean up the larger weeds.

"It takes about 10 gal. of L.P. gas to burn an acre and to operate a tractor for the length of time the burning takes. You can cover about 20 acres a day and it will only cost about $20. When I have to pay a chopper from $5 to $7 a day to chop out about three-quarters of an acre, you can see why I like the flame cultivator.

"But," he cautioned, "it does take good management."

As Delta station's Mr. Williamson says, "The farmer who purchases a flame cultivator, thinking he has a 'wonder' machine that will cover up his errors in farming, should save his money. He will likewise find that it cannot be used solely as a means of 'getting out of the grass in wet years.' Flame cultivation is not the complete answer in weed control, but it has proved most economical when wisely used as a part of regular cultural practice." ■

The White Gloves That Turned Tattletale Gray

THE "white glove," to infer the cleanliness of the electric range, is the latest in gimmicks used by the electric range industry in its sales promotional, advertising, and display materials.

The theme of the campaign is that electric cooking is "white glove" clean and illustrations of white gloves are an important element in the advertising and display materials.

When a series of "white glove" ads was run in the territory of a large eastern gas utility by a competitive electric company, the gas utility decided to wage a campaign of its own.

Two women were assigned by the gas utility to call on 105 electric range users in the territory of the gas company. In each of the 105 interviews, the housewife permitted the interviewer to enter her kitchen and wipe a white glove across the top of the burners. This method was selected as the best way to determine if the burners were clean and, if not, how much dirt was present.

Results of this survey follow:

Amount of dirt	Number of gloves	Percent of total
Clean	10	9.5
Slightly soiled	18	17.1
Very soiled	77	73.4
	105 gloves	100%

After the results of this survey and the photographs of the gloves used were brought to the attention of the local electric company, it decided to discontinue the local "white glove" program. Its "white gloves" had turned to tattletale gray.

Reprinted from Gas Service, published by Gas Service Co., Kansas City, Mo.

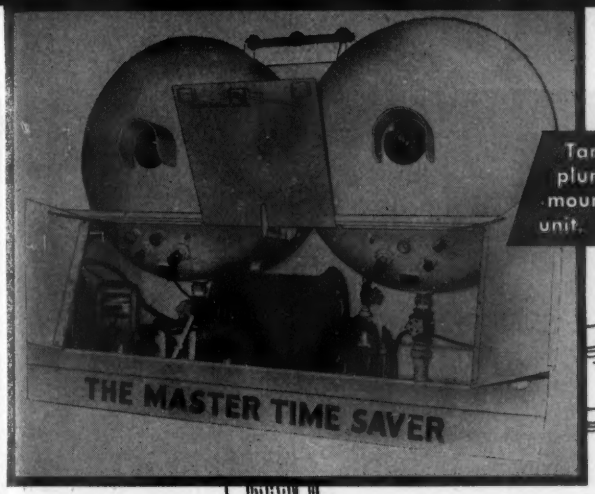
Coming . . . Next Month LPG Househeating Issue

July is the month when LPG operators and appliance salesmen face their annual sales paradox—whipping up enthusiasm for househeating appliance sales at the very moment when the top is threatening to blow right off the thermometer. July, August, September—these are the big months for selling this load.

Househeating with LPG is growing in all directions: where not so long ago it was a luxury fuel, it is now directly competitive with oil on a cost basis, or at least so close that its obvious advantages are overbalancing any small price differential.

Househeating is unlike any other domestic load. It's not what might be termed a "plug-in appliance," to borrow an electrical term. That's one reason why it is so important for the dealer to arm himself with all possible ammunition and equip himself with all the facts before embarking on this campaign.

July BPN will endeavor to provide the basic know-how and the sales ideas that will enable the dealer to become a strong factor in this growing domestic market.



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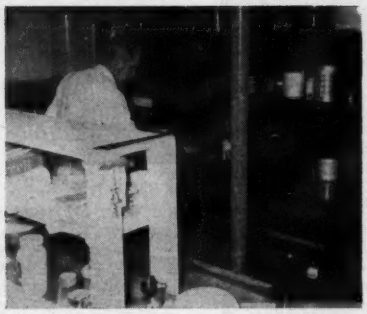
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Left: a front view of Sagebrush Inn, located three miles south of Taos, N. M. Center: The chef at Sagebrush Inn prepares dinner on the 10-burner LPG range. Oil was originally used for cooking but the messiness and fire hazards connected with its use brought about a change to L.P. gas. Right: A 500-gal. tank is housed in a special adobe lean-to, which was designed to blend with the Pueblo architecture of the main buildings. This tank supplies the LPG for cooking, water heating, and for some space heating at the inn.

The Customer Demanded LPG—So They Started a Gas Company

By Harold C. Hood
Field Editor

Sagebrush Inn, near Taos, N. M., needed L.P. gas so Ilfeld Hardware established a gas company to provide the supply. The inn uses LPG for cooking and water heating, and will shortly use it for space heating as well.

SAGEBRUSH INN, located three miles south of Taos, N. M., enjoys the distinction of being one of the very few LPG customers responsible for the establishment of a gas company. The inn was first supplied with LPG in Standard Oil Co. "Flamo" bottles. When the area did not prove as lucrative as Standard had expected, the company abandoned the territory and Flamo was no longer available to the inn.

Saul Harberg, owner of the Ilfeld Hardware & Furniture Co. in Taos, was approached by Mr. Henry of the Standard Oil Co. to act as agent for them and deliver the Flamo to supply the inn. The inn at that time (November, 1935) was the largest of five customers in the area. Mr. Harberg agreed, established the gas company as a branch of the parent company, and today has a flourishing business with over 500 customers.

Built almost entirely of adobe bricks covered with cement and adobe plaster, the inn is typically Pueblo in architecture. It is located four miles from the famous Taos Pueblo, built centuries ago by the Indians, and is similar in construction. Indian arts and crafts are used in the decorative scheme, and Spanish colonial furnishings may be seen throughout the inn. Many well-known southwestern painters are represented by the paintings on the walls.

On average week-ends during the summer months it is not unusual for 1000 diners to be served in the spacious dining room. Meals are prepared on a 10-burner South Bend range with two built-in ovens. Mrs. Helen Kentner, who with her husband originally owned the inn, relates that before the range was converted to LPG in 1932 it burned oil and caused the kitchen personnel much extra work. The oil dripped on the floor and required constant cleaning up. The conversion to LPG was made because of the messiness of the oil and the fire hazards.

When LPG was first used at the inn six bottles were hooked in series to furnish the gas. Today a 500-gal. tank supplies all the gas for the inn. A special adobe lean-to, blending in with the architecture of the inn, houses the tank.

Water for the kitchen and for all guest rooms is heated with LPG. A 450-gal. hot water tank is located just off the kitchen, and furnishes more than enough hot water for all the inn's needs.

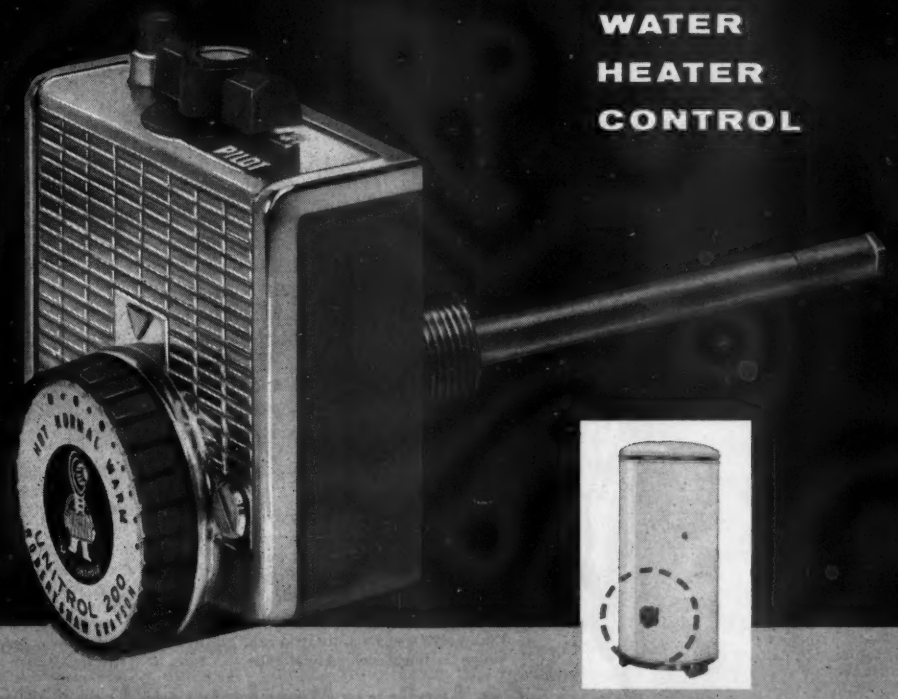
At present the guest rooms are heated by small, built-in pinon wood fireplaces which give off more atmosphere than heat. M. D. Vallier, manager and son of the owner of the inn, reports that 12 new units currently being planned will be heated with LPG Panelray units. At present, the laundry is the only section of the inn using propane for heating, and the satisfactory use of LPG there was one of the factors in the decision of the management to use LPG in other parts of the inn.

Mr. Vallier reports that LPG has been a great aid in serving the inn's customers meals that are long remembered, and in rendering them other necessary services. ■

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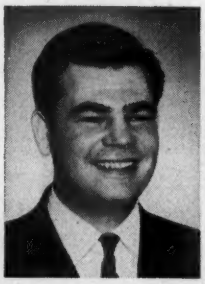
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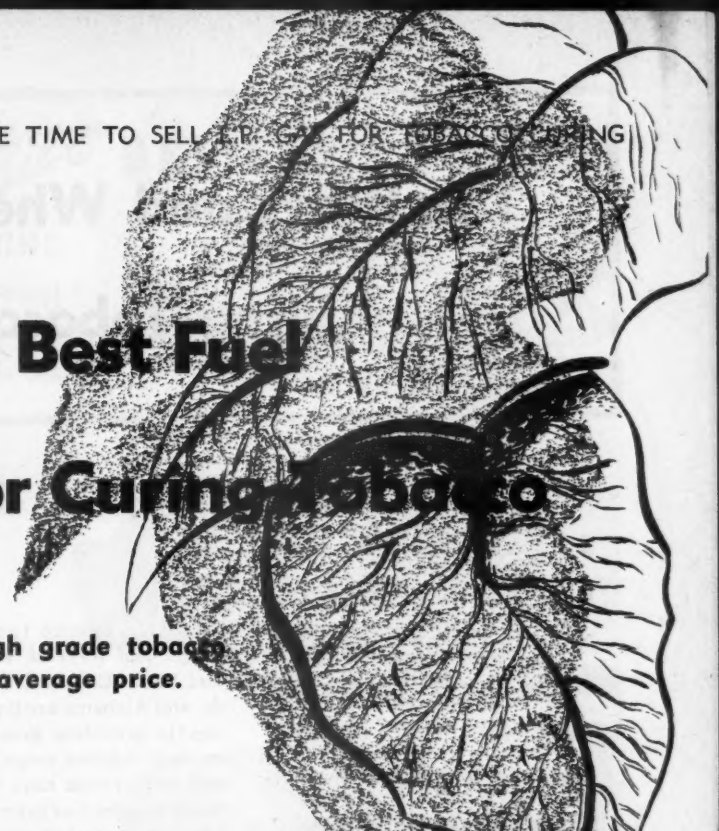


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EXPERIENCE has demonstrated that L. P. gas is the most economical and advantageous fuel for curing tobacco. It not only provides a better cure than other fuels, but also yields more higher grade tobacco, selling at a higher average price.

While this market for gas has been expanding steadily, the majority of the curing barns are still being heated with more expensive and less satisfactory fuels—charcoal, coke, oil, and wood. Potential gallonage in the tobacco-raising areas is enormous; it is estimated that the 5000 curing sheds in the Connecticut valley alone, if all were converted to L. P. gas heat, would consume 12.2 million gal. per year. And the wrapper-leaf type of tobacco grown in this area requires less heat per crop acre for curing than the bright leaf tobaccos grown in the southern Atlantic states.

The largest market at present for tobacco-curing fuel is in the bright-leaf belt in the southern Atlantic states. This is the tobacco in highest demand for the manufacture of cigarettes. To get the color and other characteristics desired, the leaves must be picked as they reach a certain stage of maturity, and cured quickly under controlled conditions which can only be attained in heated and ventilated barns. Each batch is cured in only a few days, then removed to make room for the next batch of leaves. Each barn will cure several successive batches of leaves each season, being kept under continuous heat for a period of several weeks, except when it is being emptied of cured leaves and filled with a fresh batch.

Burley tobacco is most frequently harvested by cutting the stalks near the ground, and hanging the entire plant in the barn. The desirable characteristics in this tobacco are produced by air curing at a much slower rate than that used for the bright-leaf type. The barn is filled only once during the season, and heat is used only to control certain stages of the cure, or to produce the desirable temperature and humidity conditions in the barn if the weather becomes either too cold or too humid. Artificial heat is insurance against rotting or deterioration of the crop brought about by unfavorable drying weather. In some seasons the need for fuel in curing burley tobacco is relatively little, but in other years a great deal of fuel may be consumed.

The shade-grown and wrapper-leaf tobaccos do not follow either of these patterns of curing, but the process is somewhat intermediate. In general, more fuel is needed for the cure of cigar types than for burley, and less than [illegible] tobaccos.

The value of the [illegible] tobacco has an important bearing on the amount of curing expense that can be incurred. Shade-grown wrapper leaf commands the highest price, and justifies the use of costly curing sheds and the ultimate in precision-controlled curing equipment and processes. A little improvement in quality of these leaves makes a great difference in the price.

With bright-leaf tobacco, the price is in the intermediate range, the curing process is of necessity under strict control, and the bonus price of high quality makes improved curing highly profitable.

The burley types bring the lowest prices of any of the three groups, with relatively less spread between the upper and lower grades. There is not as much leeway to permit extra curing expense to insure a higher grade leaf. However, the greater convenience of LPG as a source of heat for the burley barns, and the almost complete elimination of labor costs in connection with controlled heating, would appear to justify the more extensive use of propane heat in curing this crop.

Continued

The Whys and Wherefores of Curing Tobacco With L. P. Gas

Because LPG dries the leaf at a lower temperature in the same length of time, or even more quickly, than other fuels, it is ideal for tobacco curing. A low-temperature cure preserves tars, oils, gums, and nicotines, all valuable substances in a tobacco leaf.

By Frank L. Horne
Gastobac Co.
Charlotte, N. C.

MANY tobacco farmers in the bright-leaf belt of Virginia, North and South Carolina, Georgia, Florida, and Alabama are finding LPG the key to providing greater net profit on their tobacco crops. Many letters and testimonials have been received from tobacco farmers stating that after they started using LPG their tobacco brought more money than ever before.

The main reason that LPG does a more profitable curing job is that it dries the leaf at a lower temperature in the same length of time, or even more quickly, than other fuels. This low-temperature method of curing has distinct advantages.

A tobacco leaf has a number of different substances in it, among them water, gums, tars, oils, and nicotines. Eighty-five to 90% of the weight of an uncured leaf of tobacco is water. The whole object of curing is to completely remove all the water in the leaf and leave as much of the other substances as possible. By removing this water at as low a temperature as possible, a higher percentage of the volatile oils, gums, and tars remain in the leaf. The higher the temperature of a leaf of tobacco, the greater the vaporization of these valuable substances. Their loss lowers both weight and quality of the cured tobacco.

Drying (which is essentially what tobacco curing is) is accomplished by heat and air movement. Heat is utilized to allow the air to absorb more moisture. When heated, the air rises rapidly past the tobacco leaf and absorbs water.

In previous types of curing units, fuels were used which had to be contained in flues or furnaces because the products of combustion were harmful to the tobacco. The warm air which these fuels generated was run through a series of flues or furnaces, which heated the air by radiation from their hot surfaces.

Since LPG is a clean-burning fuel with no products of combustion that are harmful to tobacco, it can be burned directly in the air. Thus, L.P. gas is doing a more efficient job by heating the air directly without flues or furnaces. Efficiency is better since no heat is lost up a stack or flue. By applying heat directly from the flame to the air that is going to dry the tobacco, more air is forced upward.

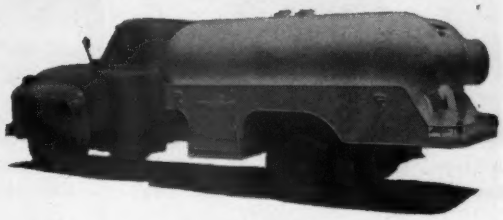


L.P. gas curing insures that tobacco of exceptionally high quality in the field will still be of top quality when it reaches the market. Leaves cured with LPG bring premium prices.

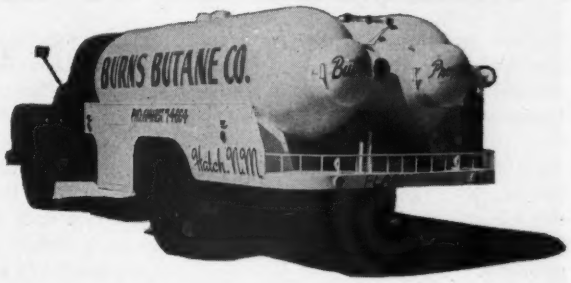
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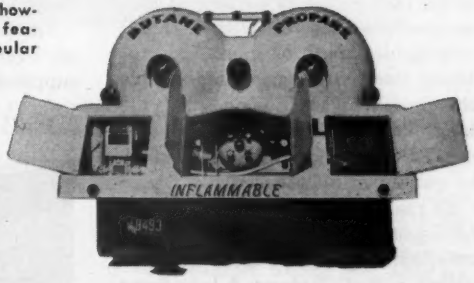
B21—America's most popular 1954 safety designed delivery truck. Motor fuel tank in rear. Meter may be installed in rear protected by small canopy or may be enclosed without destroying usefulness of design. Clutch and power take off controls are in rear. Two storage boxes are located in the rear and there is plenty of room for the hose. This unit was designed especially for safety of the driver and has been proven in service.



N17—A completely enclosed extra light weight compact unit designed with all controls, motor fuel tank, meter, hose reel, power take off and clutch controls all incorporated in rear streamlined cabinet maintaining perfect balance and symmetry of line. Rotary gauges are 1" in size, well protected.

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Rear view of N17 showing the desirable features of this popular model.





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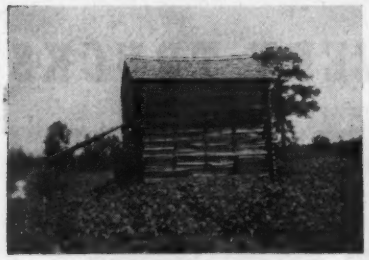
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Bright-leaf tobacco barns vary in efficiency, but all will cure tobacco at less cost using L.P. gas. LPG can be burned directly in the air within the barns as it has no products of combustion that are harmful to tobacco. This eliminates the need for flues or furnaces.





Since a gas burner draws primary and secondary air directly to it for combustion, much more air is being forced up by a direct LPG burner than had been forced up with the radiant flue method of the past. By forcing twice the amount of air past the tobacco, the same drying effect can be accomplished at a lower temperature.

Valuable Substances Remain

The result from using an LPG curer is that less of the tars, oils, and gums are baked out of the leaf by high temperature, but still all the water is removed due to the rapid air-movement type of drying. This is what the tobacco farmer has been striving to attain. With flue systems, he has been forced to use higher temperatures to get the job done in a reasonable length of time. Also, tobacco itself undergoes undesirable chemical changes if curing time is too long. This is why the farmer who uses LPG gets more weight and higher quality in his tobacco.

To realize the advantages from his LPG system, the tobacco farmer must maintain proper pressure to the LPG curing unit at all times. A lazy flame on a burner is not efficient and does not stir up the air as a burner with proper pressure will do. Two-stage regulation has been found to be the most reliable way to insure proper pressure. Up to 600,000 Btu per hour is required in some tobacco barns. This large requirement of heat is best taken care of with less fluctuation by using two-stage regulation. In the average installation, a 10- or 15-lb regulator is placed on the bulk tank and a low-pressure regulator is placed just outside the tobacco barn.

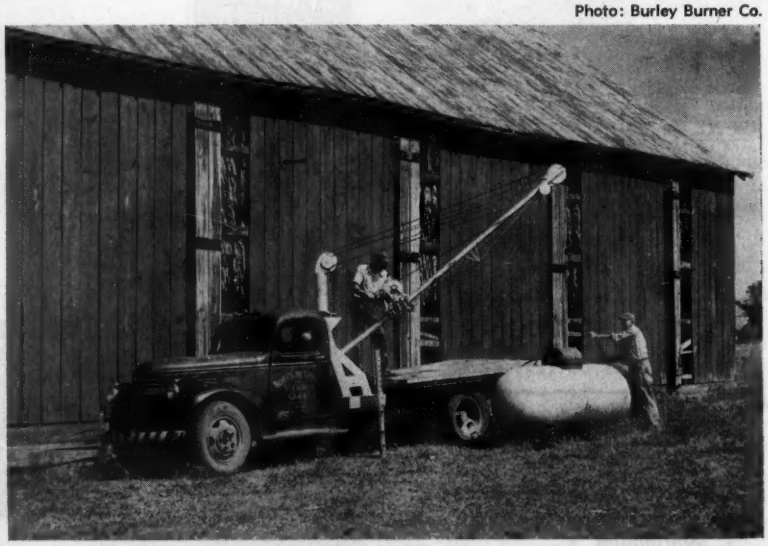
Since an LPG burner circulates a great deal of air up past the tobacco, it must have an ample air supply. Ventilation is an important factor and one of the hardest to control. The typical tobacco barn is roughly 16 ft square. The barn is about 20 ft high with a steeply pitched roof. The gas curing units are placed on the dirt floor of the barn, and the tobacco is hung on tiers that start about 5 to 6 ft above floor level. The tiers run across the tobacco barn and are generally made of 2x4-in. boards spaced 4 ft apart horizontally and about 2 ft apart vertically. The average tobacco barn has six tiers vertically and four tiers horizontally. Tobacco leaves are hung over sticks about the size of a broom handle and about 4½ ft long. This allows enough room to hang a stick, with tobacco leaves strung to it by twine, between two of the tier poles, which are 4 ft apart. In this pattern, the barn is filled with tobacco.

The problem is to move the heated air evenly past this tobacco. Air is supplied to the burner units by opening holes in the side of the barn near the floor. At the top of the barn some means of venting the warm air (which by now should be saturated with water) must be provided. By controlling top ventilation, the farmer can regulate the air flow movement according to the different requirements of the curing process.

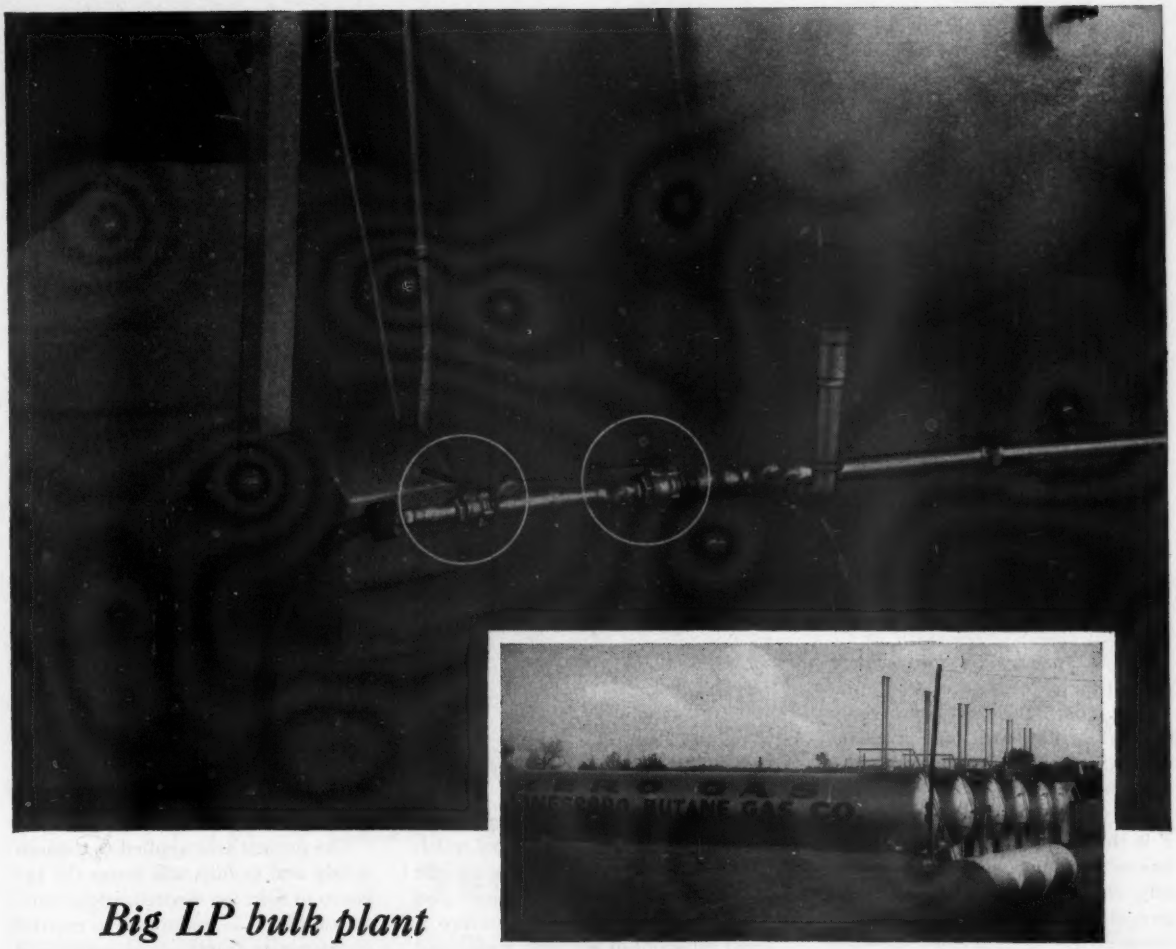
Top Control

A rule of thumb has been evolved for determining the proper amount of venting to have in a tobacco barn —1 sq ft of ventilation at the top and bottom of the barn for every 100 sticks of tobacco. With an LPG unit the farmer should not try to control the ventilation from the bottom. If he shuts off the bottom vents, an LPG curing unit will pull air from the top ventilator and cause a poor drying condition. Cool air would be pulled past the tobacco, thus greatly slow-

Photo: Burley Burner Co.



Tobacco barns in the burley region are considerably larger than those used for curing bright-leaf tobacco. With burley curing the standard method is air drying with supplemental heat to compensate for bad weather.



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ing down the rate of drying of the tobacco that would be exposed to the cool air.

The tobacco farmer is accustomed to having a unit that pulls its primary air for combustion from outside the barn, so his troubles are not as great on flue units if he tries control from the bottom vents. The gas units pull primary air right into the barn and any shutting off of its supply is going to cause a slow-down in leaf drying. At certain stages of tobacco curing a reduction of air movement is desirable; therefore, a controllable top vent is of utmost importance.

Tobacco curing consists of three main steps, each accomplishing different purposes, so heat and air requirements differ. The first of these steps, yellowing or coloring, is a process whereby a very small smount of heat is put into the barn. This allows the tobacco, which usually has a very greenish cast when picked, to turn the good lemon yellow color which is so desired by the cigarette manufacturers. Too much heat or air movement at this time will start premature drying, which causes the tobacco to remain green.

Many tobacco farmers say that 90° F is the proper temperature to yellow tobacco most successfully. Actually about 5° to 10° above outside temperature is the proper yellowing temperature. Should a 90° temperature be maintained inside the barn when outside temperature is 65°, the air in the barn would be very much lighter than outside air. It would rise rapidly through the tobacco and cause possible greening. Therefore, a great differential between inside and outside temperature is not good for yellowing.



Photo: Burley Burner Co.

A big heater with flue extensions to distribute heat is used in this burley tobacco barn in Lexington, Ky. Cultivation of burley tobacco is widespread and provides an opportunity for considerable sales of LPG.

The proper heat applied to tobacco gently and evenly will cause the tobacco to turn the desired bright lemon yellow. It is important to restrict air movement as much as possible at this time. Too much inlet and outlet air will start the drying process,



Heating system for curing burley tobacco set up in a Kentucky barn. Temperature in the barn should be about 5° to 10° above that outside for proper yellowing of the tobacco.



Automatic heating system set up in a modern bright-leaf tobacco barn. Automatic control unit is beside the door with wire from control unit going up to thermostat bulb on a tier pole.



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which is not desired at this stage. Vents should be closed top and bottom.

The next step is leaf drying. After the tobacco has attained the right color, fast drying is in order to keep the color that has been obtained. Fast drying now does what is termed "fixing the color." If drying is done too slowly at this stage the tobacco begins to darken and take on a decided brownish cast. This is not desirable in bright leaf tobacco. To attain fast drying the vents at the top and bottom of the barn are opened and heat is poured on. This rapid heat and air movement past the tobacco begins to pull the moisture from the leaf in great quantities. Temperature goes up to about 135° or 140° F, where it usually stabilizes even with heating units wide open and functioning perfectly. Evaporation of the moisture from the leaves has a cooling effect, which brings this about. In tobacco curing the heat from the LPG burners is met with a cooling effect of evaporation from the leaf. These two forces balance each other at approximately 135° to 140° F until the leaf is almost dry, at which point the cooling effect diminishes.

Killing the stem is the third and final stage in curing. A leaf of tobacco has a stem running through the center like a large artery. This stem must also be completely dried or tobacco will spoil in later storing. Since the stem at this stage has no great volume of water in it, very little cooling effect is felt by the evaporation of water from it. It requires a higher temperature to dry this stem since the water is held more deeply. This is now more a process of cooking the water out of the stem. Therefore, the air movement in the barn needs to be slowed down to raise the temperature enough to make the water evaporate. The vents are almost closed at the top in this stage and partially closed at the bottom. This allows plenty of air for combustion, but slows down the speed of the air movement through the barn.

After the tobacco is completely dry, including the stems, the heating units are shut off. Usually the drying process takes four to five days from the time the burners are first lighted for yellowing until the stem is dried.

So that the farmer may be able to handle the tobacco, which is now very brittle, he opens the doors and ventilators of the barn and allows the natural humidity of the air to be picked up by the tobacco. This is what is called coming "in order" or coming "in case."

Considerable work has been done with the shade tobacco in the Connecticut river valley and in the Georgia-Florida area. This tobacco is grown beneath cheesecloth shades, hench the name "shade-grown." This tobacco is largely used in the manufacture of cigars and cigar wrappers. Some of the premium cigars are made entirely of this wrapper-type leaf.

Growers in the past have relied largely on natural ventilation through the barn for most of the drying. However, the shade growers have been using charcoal fires for an initial firing to wilt the tobacco and to accelerate certain desirable chemical changes in the leaf. In damp weather it becomes necessary to have more or less continuous firing to keep the tobacco from spoiling. As a result, large quantities of L.P. gas are used in curing the shade tobacco. The University of Connecticut issued a report based on experience during the 1950 season in which the summary and conclusions stated that (1) "Gas firing produced tobacco with an average value of 40 to 48 cents more per pound than the average value of the tobacco cured with charcoal. (2) Curing with gas cost approximately $60 per acre as compared with approximately $100 per acre for charcoal briquets during the 1950 season."

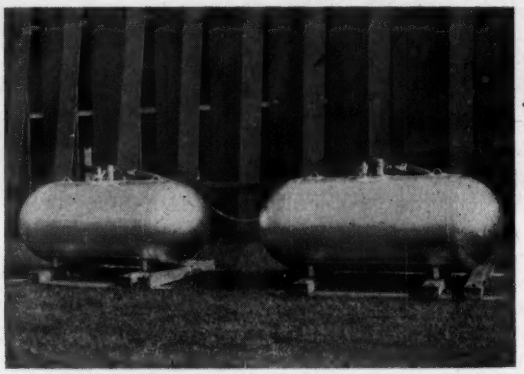
This type of report from an impartial source points out the reasons why L.P. gas should be sold in volume for this application. The average value of this shade tobacco was about $4 per lb, which is considerably higher than the other types of tobacco.

The curing of burley tobacco with L.P. gas may account for a large volume of LPG sales in the years ahead, as there is considerable evidence that direct firing with L.P. gas produces a much higher quality of tobacco than did former methods. Cultivating of burley tobacco is widespread and thus provides an opportunity for considerable sales of L.P. gas.

There are various other types of tobacco, all of which are cured in a drying process. Whenever the outside weather is too damp or cold for this drying to take place naturally, L.P. gas can be used because it is a clean-burning fuel which can be utilized in direct-fired heating apparatus with maximum efficiency.

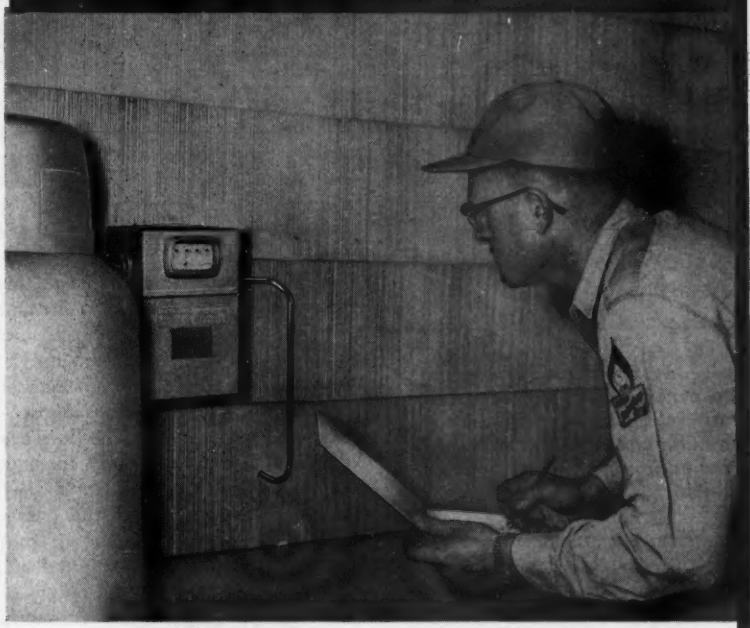


Large curing barns in the wrapper-leaf tobacco district of the Connecticut valley have heaters on hoses so that they may be moved out of the way when the time comes for filling the barn.



Two skid-mounted tanks supply the fuel for heating a large tobacco barn in Connecticut. Shade-grown or wrapper-leaf tobacco is used in the manufacture of fine cigars and cigar wrappers.

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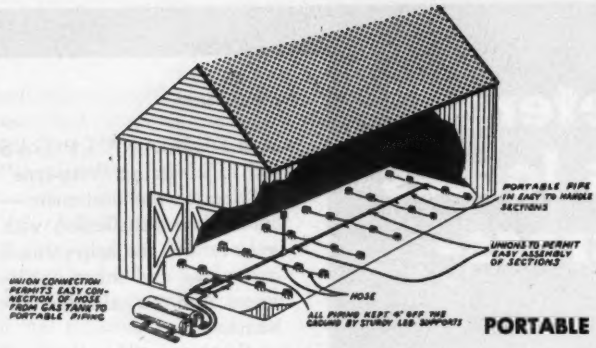


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New method of portable piping permits easy installation in any size tobacco shed — the time required for setting up portable piping in a ten bent shed by actual test is approximately fifteen minutes.

The Tobacco Farmer Must Be Sold on LPG and Equipment for Curing

By Carl Abell • Editor

The tobacco curing load is a desirable one for the LPG dealer because it comes in the summer when other loads have tapered off. The advantages of LPG for curing tobacco can be worked into a good sales talk by the dealer when he contacts the tobacco farmer. And, although the initial cost of equipment is high, there are ways of making financing less painful.

LIQUEFIED petroleum gas is the most profitable fuel that the tobacco raiser can use. The cost of the fuel is but one minor factor. Others of far greater importance are saving of labor and labor costs, production of higher quality cured leaves which bring higher prices, and lessening of fire hazards. In those areas where more than one filling of the barn is necessary in one season, the curing process is quicker with LPG, so one or more additional barns of tobacco may be cured during the season.

Many experienced users in the bright-leaf belt—the south Atlantic states—report that their income per acre is from $100 to $250 higher than it was when they were curing by other methods. In the shade-grown tobacco belts, reports quote considerably higher figures, while in the burley belt and other areas where curing is mainly an air-drying process and the value of the cured crop is lower, the increased profit is scaled down more or less in proportion. But in all parts of the country we get the same report: LPG heat produces a higher weight of better-grade leaves which bring a higher price per pound.

In the Carolinas we pick up the news that no grower can afford to fire with the old stand-by, wood, even though he may have it available in his own wood lot. The cutting costs too much in time, effort, or wages, the firing takes too much labor, the farmer spends too many sleepless nights tending the fires and worrying for fear the barn may burn down. With this tobacco farmers contrast the improvements with the new LPG curing system: nobody cuts any wood, nobody totes any wood or cleans out any ashes, the LPG driver just puts fuel in the tank, and when the fire is needed, the farmer goes into the barn and lights the burners. After the burners are in adjustment —which takes but a few minutes— the temperature of the barn may be controlled by adjusting a thermostat. The automatic control feature holds the temperature constant until the farmer has some reason to change it. And thereafter he only needs to look in once or twice a day. He can go home and sleep at night, with no fear that flues will burn out and set the barn on fire. There are no flues, and simple wire screens over the burners prevent fire in case a "hand" or even a whole "stick" of tobacco falls over the burner.

Less fuel is used when firing with propane than with any of the liquid fuels, because with the clean odorless combustion of LPG, direct heat is used, releasing the products of combustion right in the barn, and not wasting any of the heat through flues. With kerosene or other oil heat, this is not advisable, since the smoke and unburned fuel escaping into the barn have a deleterious affect on the tobacco, causing a reduction of market value. With these fuels, flues are necessary for clean curing. The flues are installed to detour around through the lower part of the barn, so they may transfer as much heat as possible to the air. The flues slope up from the fireboxes to insure constant draft, and since they mount to a height of 3 or 4 ft, they limit the minimum height at which the leaves may be hung. Some of the capacity of the barn, lost with flues, can be recovered and put to use with gas heaters, which are on the floor.

Flues have several other disadvantages which are costly. They rust out rapidly, and if a hole burns through while the fire is going, there is always the possibility of burning down the barn. This happens with distressing frequency. The flues must be given proper maintenance and replaced rather frequently for the prevention of fire. They are also in the way of the workmen while the barn is being filled or emptied, slowing down operations and raising costs. Using flexible hoses, LPG burners may be quickly disconnected and re-

Continued ➤



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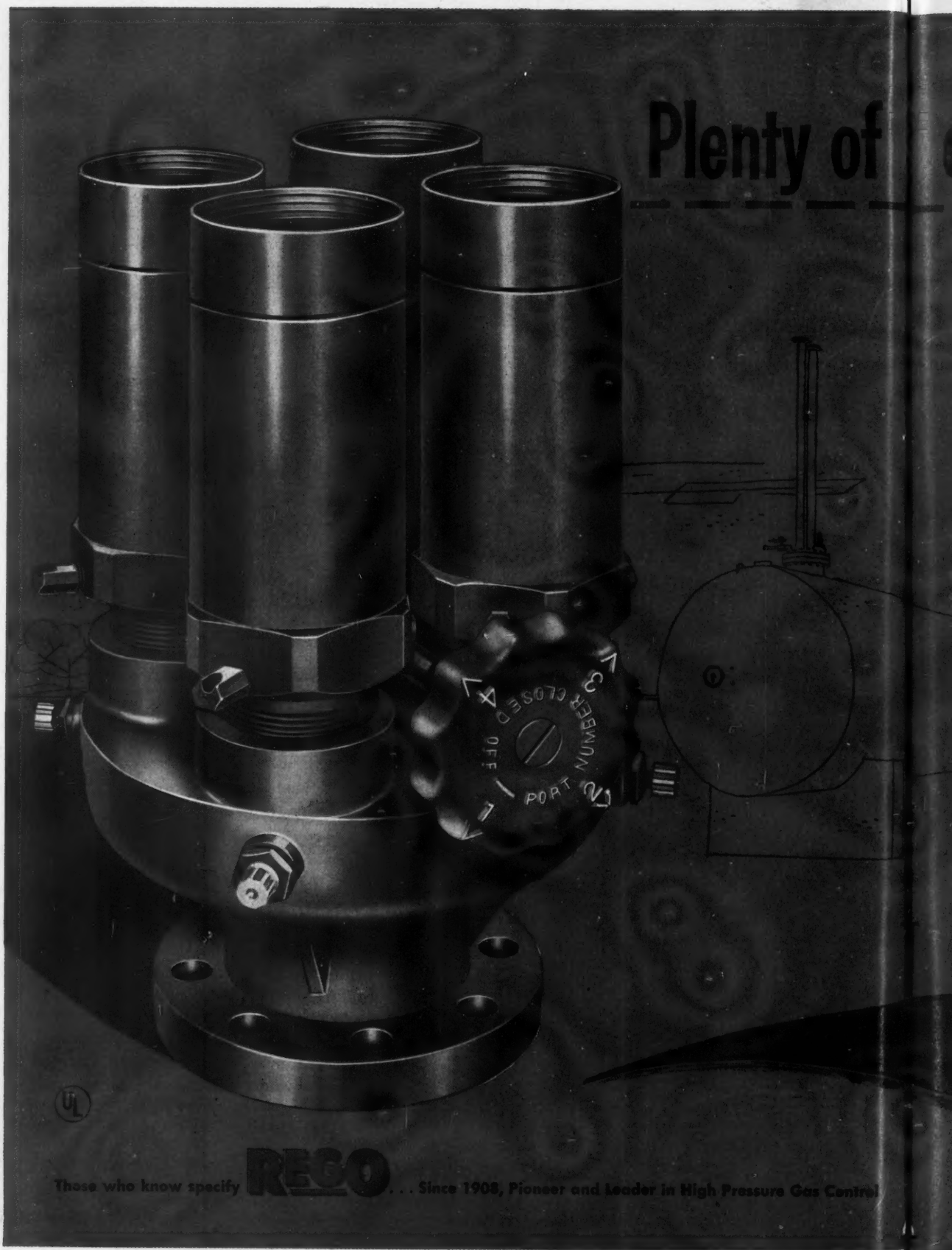
Takes the awkwardness out of unloading–reduces fire danger to the minimum–makes walking safe and easy. Ladder or stairway goes on right or left side or front, as you order. Loading drop folds out of the way. Takes minimum space. Shipped knocked down, cut and marked for easy erection.

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The new RegO 7564 Series Relief Valve Manifold is the only relief valve manifold with adequate passages through the manifold body—assures minimum capacity loss—the only manifold to provide full protection through a single opening for 30,000 gallon LP-Gas containers. Any three relief valves provide a combined capacity of 27,750 cubic feet of air per minute, usually more than ample for a 30,000 gallon LP-Gas container . . . permitting removal of the fourth relief valve for test or replacement at any time. Manifold body is cast steel . . . relief valves are steel. It's another FIRST for RegO . . . available through your RegO distributor.

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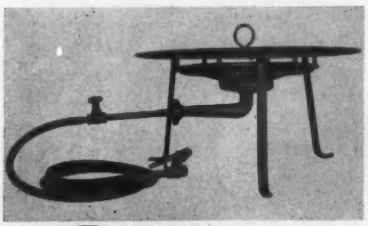
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- MAKE A SUBSTANTIAL SALE PROFIT
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Buckeye

GAS FIRED TOBACCO CURING SYSTEM



The scene above at left shows placement of tank outside barn for easy servicing and on the right are Buckeye Tobacco Curers set up in series.

You can add a profitable sideline to your present service by becoming a dealer for Buckeye Gas Fired Tobacco Curing Systems. Not only will you make a profit on each sale, but by converting tobacco farmers in your area to these gas systems, you benefit by increased gas consumption. Buckeye Tobacco Curers are widely recognized as sturdy, high quality, well engineered products. We'll furnish the literature you need to help make sales. Fill in the coupon and mail today.

TOBACCO CURER DIVISION
BUCKEYE INCUBATOR CO.
Springfield, Ohio, U. S. A.

Gentlemen:
Please send me information telling how I can become a Buckeye Tobacco Curer Dealer.

Name .....

Address .....

City ..... State .....

moved, or carried out of the way in the barn so the working area is cleared and work can progress more rapidly.

Good circulation of air must be maintained in order to insure uniform curing and prevent the pole rot and other "diseases" which result from too high humidity in the barn. Circulation depends on both convection currents and dynamic movement of the air at the source of the heat. With indirect firing, which is necessary with all other fuels, the dynamic movement is up the chimney and out the stack, so the only air movement induced in the barn is the convection around the flues, which is inclined to give sluggish movement. With the direct firing of the LPG burner, the air is given much more motion as it leaves the source of heat, thus providing more positive circulation. Because of this better circulation, and the even distribution of heat that is possible with multiple-burner installation, it is possible to hang more tobacco on a stick and still maintain adequate circulation through the highest tier to carry out the moisture and maintain even curing. This is another factor in increasing the throughput of the barn.

The tobacco-curing gas load is highly desirable to the LPG dealer, as it comes late in the summer, when other uses have tapered off toward the year's low. And it is not "peanuts." The average consumption for a barn in the bright-leaf belt is between 800 and 900 gal., and the majority of these tobacco farmers have more than one barn; a large percentage have four and five. A tobacco barn's summer consumption in this area will balance the winter consumption of a central heating plant in an average sized home.

A study of comparative curing costs by the Connecticut Agricultural Experiment Station, covering charcoal and L.P. gas as fuels, shows an average consumption of approximately 280 gal. per crop acre. Five acres consume approximately 1400 gal., which balances the consumption of a central heating plant in New England. The cost of bulk gas in this study was less than the cost of charcoal. The labor cost was much reduced with gas, as one man could supervise and control the heating of several barns, while the charcoal heating required the constant attendance of one man. The report concludes that the labor cost with gas is only 20% to 25% as high as with charcoal.

The initial cost of equipping a barn for gas curing is high. A tank or tanks, controls, thermostat, piping, tubes, and burners must be supplied. For large tobacco barns, such as are used in the wrapper-leaf and the burley districts, this may represent an investment as high as $1000. In the bright-leaf barns the investment is not so high because the barns are smaller and the burners not so numerous.

There are several ways of making this financial consideration less painful to the customer—not recommended as a permanent practice in all cases, but certainly justified in getting started.

One of the large and expensive items is the tank. The cost seems high for such a short season's use. Perhaps it is not necessary for the farmer to buy that tank. Any LPG business that is growing needs tanks to equip new customers. The period when the highest number of tanks is installed in permanent locations is generally in the late fall, in preparation for win-

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Colo-Rite, with a unique gas-fired, 2-ring burner, offers you the modern way of curing tobacco. Experience has proved that all burners can be used and thermostatically controlled throughout the coloring period. Low initial cost. Easy installation. Economical operation. Increase your tobacco profits with the most versatile curer on the market —Colo-Rite.

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GAS GRIDDLES

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ter heating. Why not get these tanks a little earlier in the summer, rent them for use in heating tobacco barns for a period of two or three months, and then move them to permanent locations for domestic use? Next summer the process may need to be repeated, but some day the value of LPG for tobacco curing will be so firmly established that the majority of users will prefer to buy their own tanks. And the extra profits from their tobacco crop will enable them to make the purchase.

Another logical method of selling tanks for this purpose is an adaptation of a method used for many years in carburetion—pay for the installation out of either savings or profits. The economics of each district will determine whether the savings or the profits will be the logical source of the payments. Where there is a wide differential in fuel costs, savings is probably the more potent method, but the extra profits obtained from wrapper-leaf and bright-leaf cured with LPG is certainly a talking point.

In the burley district, where LPG curing is supplemental to air curing and use of gas is intermittent, tanks do not need to be so large. Some of the systems made locally for burley use are also made up in the simplest possible form, without the thermostat and automatic controls. They require more personal attention while they are in operation, but their periods of use are intermittent and seldom of long duration. And even when manually operated they offer a great saving in time as compared with the customary coke-fired stoves.

Most tobacco growers are like most other people; they do not buy their equipment months in advance. The day they need the heating system is the day they go to town to buy it. LPG dealers are finding that it is necessary to be ready to make quick installations if they are to cash in on the tobacco curing business. Some are assembling the piping and valves in advance, using sectional units that can be put together with pipe unions and a bare minimum of cutting and threading of pipes on the job. Some even make complete standardized sets for standard barns, which can be laid on the floor and connected with the tank and the controls with LPG-proof hoses. A distributor in Connecticut advertises a knocked-down system that can be installed in 15 minutes. He is really in shape to do business.

There may be some difficulty in getting the tobacco growers started using gas for curing. After a short period of proving, sales come easy and the business can be built up very fast. It is a most desirable type of business, with the gallonage coming at the lowest seasonal period. The consumption is high while the heaters are in operation, making the deliveries large. The fuel is used at the time of year when roads are generally unobstructed by weather conditions. And in a great many cases the use of propane to heat the barn has led to the installation of propane equipment to heat the house and to supply other domestic needs. Good business for all! ■

Bibliography of additional articles on tobacco curing which have appeared recently in BPN:

A Dose of LPG—The Best Medicine for Curing Tobacco—Alex W. Bealer III...:Nov., 1954, p. 38

Tobacco Curing Research Favors L.P. Gas .....Aug., 1954, p. 48

LPG Curing Brings Higher Returns on Tobacco—H. H. Slawson .....Mar., 1954, p. 52

BURLEY & SHADE GROWN TOBACCO AREAS!



Typical KUR-MOR Burley Barn Installation

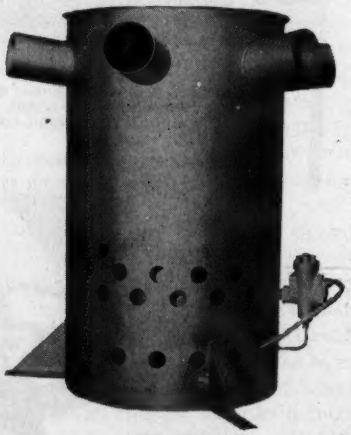
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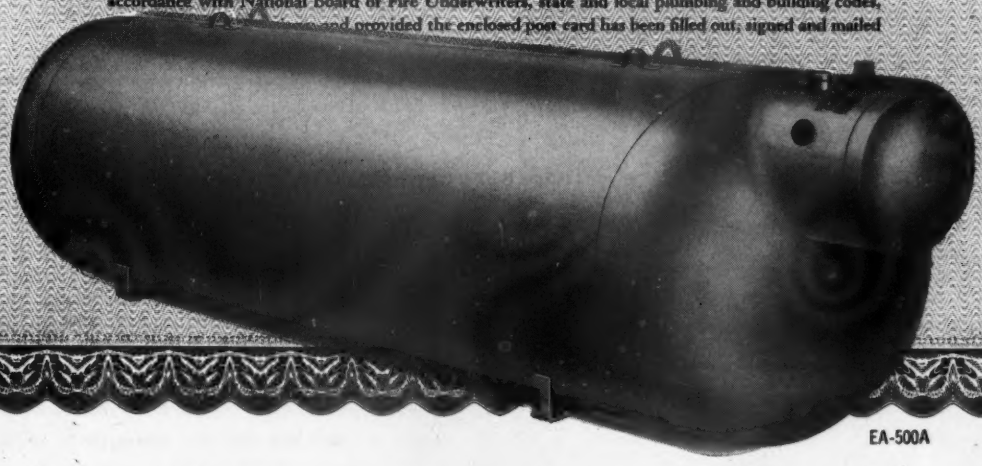
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MAKERS OF PRESSURE VESSELS AND DRAWN SHAPES

BPN staff report

By Harold C. Hood
Field Editor

Direct-Fired L.P. Gas Kilns Rate High With Plywood Industry

L.P. gas produces a higher temperature, yet at the same time decreases the fire hazard. The LPG-fired kiln also requires less floor space and is easier to install and maintain.

THE trend toward direct-fired propane kilns for drying plywood veneer is picking up momentum in the Northwest. Builders are realizing the advantages of rough-finished plyboard over fir boards for sheathing and sub-floors, and the increased demand for this building material has necessitated additions to existing production facilities. In their expansion programs plywood manufacturers are showing a preference for the efficient, easily erected dryers using compact LPG heating units.

More to Come

Within the past year and a half, two of these, manufactured by the Moore Dry Kiln Co., have been put into operation in the neighboring towns of Corvallis and Albany in northern Oregon, and the installation of several more throughout the country is contemplated. The advantages of this type of unit over the conventional steam-heated models are sufficient to warrant the serious attention of all plywood operators.

Briefly, the purpose of any plywood kiln is to dry the thin sheets of veneer as they come from the peeler logs sufficiently to permit gluing and prevent warping later on. Operating around the clock, Plywood Products Corp.'s new dryer installed at Camp Adair near Albany in October of last year is capable of handling 2.5 million sq ft per month.

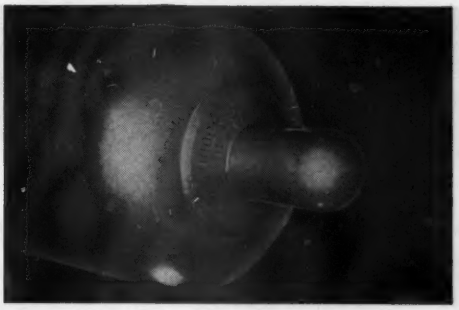
Two LPG burners manufactured by Natural Gas Co. of San Francisco and capable of a combined output of 3.12 million Btu, maintain a temperature of about 385° F inside the drying bay, and may consume 35 gal. of fuel per hour. Total time for veneer to travel through the dryer is three to nine minutes, depending upon thickness and moisture content.

Four sheets of 4-ft veneer, side by side, are loaded on each of four levels of rollers and are automatically fed through the two bays of the dryer. The first bay, containing the burners and cross-circulating fans, removes the excess moisture, and a large cooling fan, equipped with a 4-ft blade, circulates 30,000 cu ft of air per minute through the second bay to cool the veneer to handling temperature.

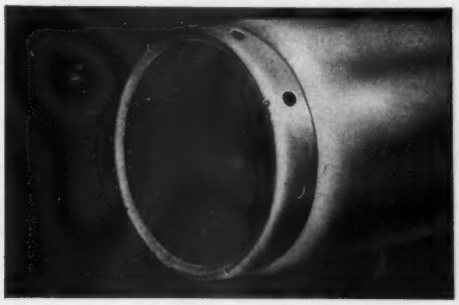
Record Kept

A recording hygrometer keeps a running record of moisture content of the air inside the kiln. If this becomes too high, humidistats bleed some of the moisture-saturated air to the atmosphere and draw in outside air. Thermostats inside the drying compartment control the amount of primary air to each of the venturi tubes, and the proper amount of propane is automatically drawn into the air stream. Four Partlow controllers act as safety devices, shutting off the supply of gas in case of flame failure or improper air circulation. After

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Trade-Mark
CYLINDERS
for LP-Gas
are your best buy



Data remains easy to read throughout life of the cylinder. Large characters are deeply cut into an extra thick, wide flange on 60-lb. and 100-lb. capacity cylinders (into valve protecting head ring of 20-lb. and 40-lb. styles).



Superior anti-rust coating protects the cylinder bottom and interior of footring against corrosion—a valuable extra at no additional cost to you!

When it comes to LP-Gas cylinders, your wisest, most economical investment is in the PREST-O-LITE Brand. For PREST-O-LITE Cylinders combine unsurpassed quality, low cost, and attractive appearance to satisfy the exact needs of LP-Gas users everywhere.

PREST-O-LITE Cylinders are rugged and sturdy for long, dependable service life. They're lightweight for easier handling at lower expense. Factory testing is in excess of requirements to assure maximum safety and performance. Every PREST-O-LITE Cylinder is deep-drawn to extremely uniform wall thickness. Durable aluminum enamel protects the cylinder finish indefinitely and reduces repainting costs.

For further information write or 'phone your nearest LINDE Office today. Ask for free booklet F-8187.



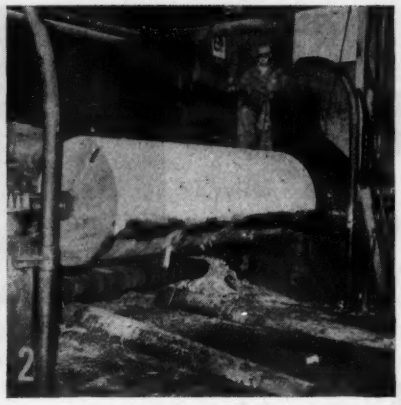
PREST-O-LITE *Cylinders are available in the popular 20-lb., 40-lb., 60-lb. and 100-lb. capacity sizes, with or without valves. Other styles can be made to order.*



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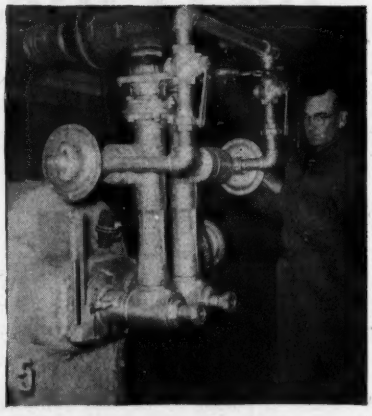
1 Peeler logs float in the mill pond outside the peeling machine building.

2 Electrically-driven peeling machine takes a continuous strip of veneer from the logs.

3 Strip of veneer is cut into sections for future gluing. Operator in background controls the knife.

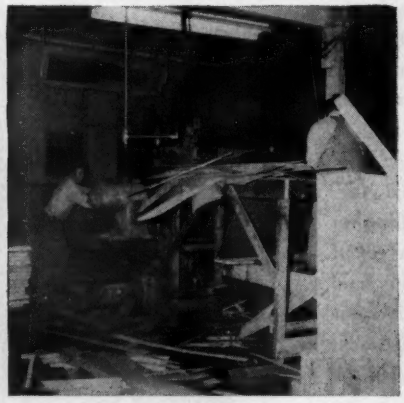
4 Pieces of green veneer are loaded into the dryer. Four banks of rollers carry the sheets through the bays.

5 Burner arrangement above propane-fired kiln is inspected by Henry Tate.

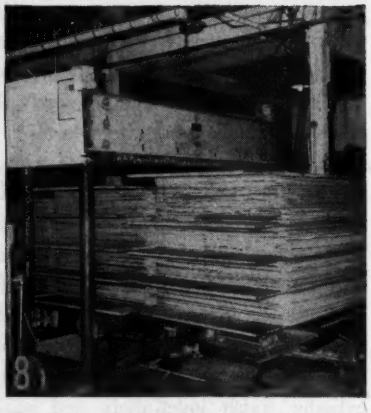




6 Henry Tate adjusts wheel controlling speed at which veneer travels through dryer. Dried panels emerge at left.



7 Glue is applied by machine to both sides of the center ply of veneer. Veneer is then pressed by another machine.



8 As one load of glued plywood panels is removed from hydraulic press, another load is positioned to go under.

such shut-downs the interior of the dryer is completely purged before burners may be re-ignited.

Fire Protection

A built-in sprinkler system provides fire protection in case veneer in the kiln catches fire. In the commonly used steam-heated dryers fires are quite prevalent, and account for much unusable veneer. Raised above its flash point, gas emitted from the hot wood occasionally ignites and flames spread through the sheets being dried. In the direct-fired installations the products of combustion from the burners act as a flame depressant and insufficient oxygen exists inside the dryer to support combustion. Indications point to a reduction in fire insurance premiums in the future because of the lessened threat of fires. To date no fires have been reported from either of the propane-fired kilns in the Albany-Corvallis area, although these operate at temperatures higher than those found in the steam-heated units.

Besides effecting a 20% increase in production per hour, these higher temperatures account for another appreciable advantage found in the pro-

Weatherhead

wraps up new sales for you with complete "packages" ...on five year credit terms



A "package" includes (2) 100 lb. cylinders, 2 caps, 2 valves, the manifold of your choice (Automatic, Manual or Tee Check), pigtails, fittings and mounting bracket.

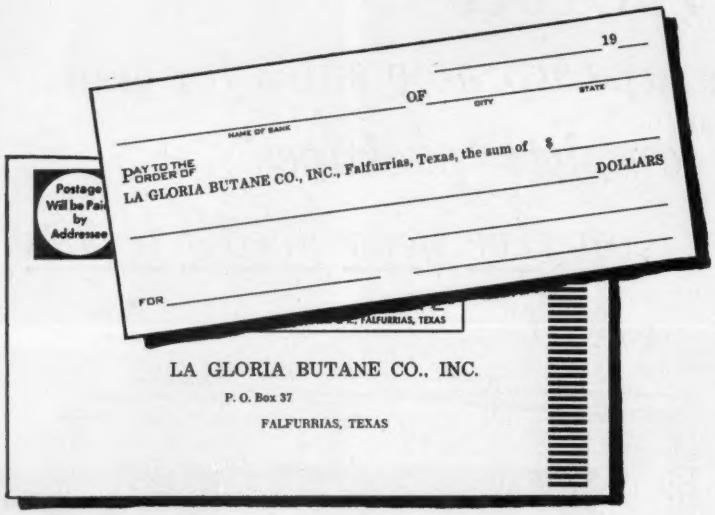
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is showing the way



La Gloria Butane Speeds Collections By Postpaid Envelopes, Printed Checks

FRANK M. COLLINS, co-owner of La Gloria Butane Co., Falfurrias, Texas, shuffled through a stack of nearly 30 postpaid letters the office manager had brought from the post office and dropped on his desk.

Speeds Collections

"This has done more to speed up collections for us than all the fancy letter-writing and collection methods we have ever used combined," he grinned.

More than two years ago, while analyzing credit accounts and trying to figure why some customers with a lot of money were slow in paying their accounts, Mr. Collins and his partner, F. D. Orth, decided most customers put off paying because of the inconveniences of finding a check book and laying hands on a stamp.

Accordingly, they printed up several thousand bank drafts, made out to their company, with spaces for the customer to write in the name and address of his bank. They had several thousand postpaid envelopes printed.

Since then they have sent a bank draft and a postpaid envelope with every monthly statement. Collections immediately started bettering, and today they are in excellent condition. Mr. Collins believes that the idea has stepped up average collections at least 10 days, perhaps more.

Immediate Attention

"When the average consumer gets a statement, he lays it aside until he's ready to pay all his bills," Mr. Collins reasons. "But if all he has to do is fill in the draft, drop it in the envelope that is with the statement and seal it, he usually does so when he receives the statement. This relieves him of the trouble of digging out his check book and finding a stamp." ■

Continued ➤

pane installations. Sap is "set" in the wood more quickly and pitch does not drip onto the rollers. In steam-heated kilns operating at lower temperatures pitch accumulations on the rollers necessitate periodical shutdowns for cleaning, and increase the associated fire hazards. The only cleaning necessary with the propane models is an occasional sweeping out of sawdust which collects in the bottom of the drying compartment.

Propane-fired veneer kilns require less than one-half the floor space occupied by steam-heated models of the same capacity. Installation is much simpler as the intricate network of piping necessary in the latter is eliminated. Erection time for the dryer at Camp Adair was five days and initial cost was approximately 35% less than for a comparable steam-heated unit.



Storage belonging to Albany Propane Co., which services Plywood Corp.'s kiln.

The oil industry also has recognized the excellent load potentialities in direct-fired wood kilns. In northern California an oil-fired kiln similar to the Camp Adair dryer recently went into operation. While operating at slightly lower fuel costs, this kiln has not produced as clean a product as the LPG units, and considerable more downtime has been necessary for cleaning.

Consuming approximately 20,000 gal. of propane per month, Plywood Corp.'s kiln provides a good year-around load for Albany Propane Gas Co., which services the installation. Propane is delivered directly to the 15,000-gal. storage tank near the dryer building by Calor Gas tank car.

Partners Kenneth Coykendall and Henry Tate of Albany Propane Gas predict that the next few years will see several more small, "package-unit" plywood businesses using LPG for drying, come into existence. Two groups in particular—building contractors and LPG dealers—hope that this prediction comes true. ■

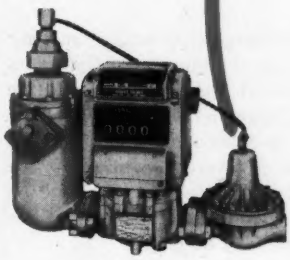


HERE'S *NEWS* FOR THE LP-GAS INDUSTRY

Neptune Meter

NOW HAS *differential* VALVE...A NEW DESIGN THAT'S

Easy on the Pump



The popular Red Seal LP-Gas tank truck meter now includes a differential pressure valve . . . a completely new valve with emphasis on simplicity and big, friction-free passages to permit fast delivery from truck to tank without straining the pump.

Here's how it does it: Primary purpose of the differential valve is to maintain pressure within the meter to keep the LP-Gas from flashing into vapor. Secondary purpose is to provide enough back pressure to actuate the vapor eliminator which purges all vapor that might enter the line ahead of the meter.

Here's where Red Seal shines! Due to the high efficiency of the Neptune vapor release design, the differential valve can be given a relatively low pressure setting, and never needs adjusting from hot weather to cold. In fact, it has no adjusting screw at all, so it's fool-proof.

The new valve is bolted right on the meter. The Red Seal is still the only meter that gives you a complete LP-gas truck metering system in one compact "package." No extra accessories to buy . . . fewer connections . . . fewer chances for leaks . . . neater installations. Safe at all LP-gas working pressures. Listed by Underwriters' Laboratories. Choice of ticket-printing or simple direct-reading registers.



Ask for Bulletin 779

RS-2-D

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FOR TANK TRUCKS, BULK PLANTS AND REFUELING

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Solutions to the Problems of Deodorizing Old Cylinders

Cylinders with objectionable odors may be deodorized by several means. Among the purges used are washing with kerosene and steaming-out. The cylinders may also be left in the open air for a prolonged period or used on installations where the gas usage is heavy.

OLD cylinders that have a strong, objectionable odor can be deodorized so that customer complaints are prevented before they are made.

The strong odor of gas which occurs when LPG-burning appliances are turned on is due to a concentration of odorants accumulated in cylinders which have been in service for some time. The odor is usually strongest when the cylinders are almost empty.

The technical explanation of this is simple. L. P. gas is given its distinctive identifying odor by the addition of a small amount of ethyl mercaptan at the refinery. The gas evaporates slightly faster than the odorant. Consequently, as gas is used out of a cylinder, a slight residue of odorant remains. With repeated use, a concentration of the odorant builds up in the cylinder and may give off a strong odor in the house when slow-lighting burners are turned on.

The cause suggests several remedies which operators have successfully used for deodorizing objectionable cylinders.

One easy solution is to use such cylinders on installations where the gas usage is heavy. The idea here is that rapid withdrawal tends to keep the product boiling, so that the odor comes off more completely and is consumed in the flame.

Another way is to install the strong-smelling cylinders in locations where the gas is consumed outdoors, and where the odor will not be objectionable.

The commonly used LPG odor purge calls for putting a pound or two of L. P. gas in the cylinder, and allowing it to stand for 24 hours while the liquid absorbs the concentrated odor. Then the cylinder is turned upside down, and the concentrated odorant is drained off with the liquid.

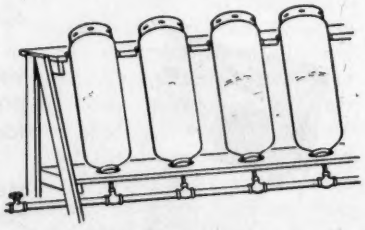
Care must be taken to pick a good time and place for this purge, to prevent the formation of a combustible concentration of gas. In a fairly good wind, however, and at a good, safe distance from property lines or buildings, this presents no problem.

Piped and Burned

Or, the liquid may be piped away to a safe place—through a length of copper tubing connected to the cylinder valve—and burned. A friction igniter is recommended for lighting the gas escaping from the tube.

Another successful method of removing excess odor is to wash out the cylinder with kerosene, which serves as a good solvent for the odorant. After rinsing, the kerosene can be disposed of either by burying or by burning.

The steaming-out process is another method in common use. Cylinders are turned upside down and live steam is injected into the cylinder. If this purge is used frequently, a rack for holding several cylinders in the inverted position and a manifold for blowing steam into all of them at the same time may be made.



This method naturally gets moisture into the cylinders, and they must be dried thoroughly after they have been deodorized.

A prolonged air purge—just leaving the cylinders, with the valves opened or removed, in a spot protected from the weather—will do some good. However, an open cylinder will probably collect dirt and moisture, and should be carefully checked for these troublemakers before being put back into service. ■

Adapted from "Cylinder Tips," published by Pressed Steel Tank Co., West Allis, Wis.



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AFTER →	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS
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% ACTUAL INVESTMENT →	1.82%	5.45%	10.91%	18.18%	27.27%

Note: The above percentages are cumulative.

Inquiry on your company letterhead is invited

LPG

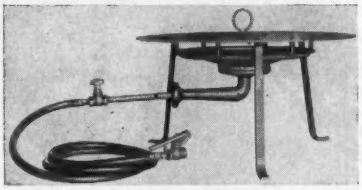
LPG CREDIT CORPORATION

312 East 131st Street • Cleveland 8, Ohio

New Products and Trade Literature

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the information desired.

1. Gas Tobacco Curing Stove



The Buckeye gas tobacco curing stove uses the same specially designed burner that the company has installed in its gas brooders and other heating units for many years.

The stove has a heat spread which evenly distributes the heat through the barn and it can be easily moved about because of a handle on top. Each stove can be hooked up into batteries sufficient in number to handle any sized barn.

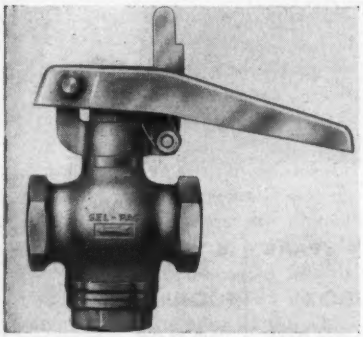
The Buckeye gas-fired system is practically automatic. Only simple adjustments are required for changes in curing and weather conditions.

The stoves are designed so that during the off-season they can be easily stacked or stored in a small area, and with little danger of damage because of the heavy material used in construction.

The Buckeye portable gas piping system can be easily moved from shed to shed because of its flexibility, thus reducing the amount of equipment needed.

Buckeye Incubator Co.

2. Hose Valve



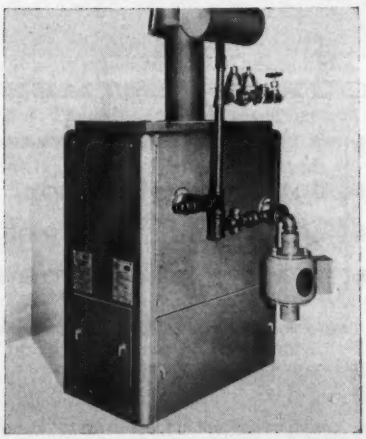
A self-bleeding, quick-fill valve with positive lever action that affords accurate control of L. P. gas flow at all times has been announced by Selwyn-Pacific. With this valve it is possible to fill to the exact level with no over-filling and no guessing. The valve can be locked in either an open or closed position. It automatically bleeds off before removal from tank connection.

The combination of speed in filling tanks and safety in the handling of this valve in the liquid filling operation coupled with the positive shut-off makes this quick-filling hose valve especially valuable for L. P. gas operations.

It is simple in design. The entire unit is quickly disassembled by removing the bottom nut. It is very light in weight, approximately 2¼ lb, and is available in ¾-in. and 1-in. female pipe sizes.

Selwyn-Pacific Co.

3. Domestic Boiler

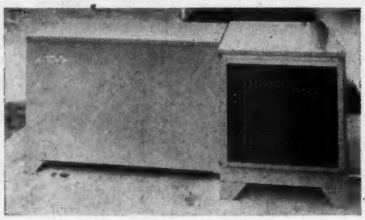


Hot water becomes competitive with warm air when Ward boilers are used, according to the manufacturer.

The Ward Heater Co. is marketing a newly designed, gas-fired hot water heating boiler for radiant, convector, baseboard and all closed systems. It is compact, light in weight, has an unique control assembly and is factory assembled, tested and completely packed for shipment.

Ward Heater Co.

4. Air Conditioner



The Cobaire air conditioner consists of a gas powered reciprocating prime mover and a standard air conditioning compressor coupled by means of a centrifugal dry-type clutch. The clutch permits the prime mover to attain a speed of approximately 1000 rpm before engaging the load of the compressor. The starting torque is thus reduced, and permits a reduction in the size of the prime mover both in horsepower rating and physical dimensions. Further reductions are made possible by the use of Cobell's "Aqua-Fog" evaporative condensing of the Freon refrigerant, a rapid heat transfer process.

Operating costs are estimated at less than ½ cent per hour. No maintenance at all is required during an average 2200-hour season, and the Cobaire will operate at full efficiency for over 6000 hours before a possible minor overhaul is required. With an outside temperature of 95° F, the Cobaire will use 55 cu ft of gas per hour and will draw 750 watts of electricity, including the blower operation in the duct system.

Installation requirements include standard ⅜-in. or ½-in. gas piping for gas supply. Standard 15 ampere, 110 volt circuit for electricity.

Cobell Industries Inc.

5. Tank Head

A newly designed L.P. gas tank heat unit is in regular production at the Weatherhead Co. It is compact, combining all necessary equipment—fill valve, vapor return valve, vapor service valve, liquid withdrawal provision, fixed liquid level gauge, and a pressure gauge port—into a single forged brass unit. It may be used on ASME, API-ASME and ICC L.P. gas containers.

Tanks of even 1000-gal. capacity are easily served with this new unit,

according to the manufacturer. The filling rate is 30 gal. of propane per minute with a 10-psi pressure differential across the head. The vapor return valve has a capacity of 40 cu ft per minute free air at 100-psi flowing pressure and will close at a 10-psi pressure differential.

One of the features of this unit is the use of an excess flow check valve which combines the requirement for the filling section with the necessary excess flow check protection for the liquid withdrawal port. By this arrangement, it is possible to use a large excess flow valve with its consequential improvement in accuracy and safety. This check valve closes at less than 10-psi pressure differential with a flow rate of 19 gal. per minute liquid propane.

The design of this unit permits all necessary items to be grouped into a small space. The materials used in this unit head were selected for resistance to corrosion, strength, and stability in commercial propane and its common impurities.

The high transfer rates available with this unit are provided because the dip tube is a full ¾-in standard pipe.

The Weatherhead Co.

6. Cooking Control



A simplified automatic cooking control for "Modern Maid" ranges has been announced by Tennessee Stove Works. Named the "Dial-A-Temp," it combines a cooking chart with an electric timer. Dial is calibrated for beef, pork, veal, cakes, etc. The housewife just turns to the food she wishes to cook and the length of time required as well as the proper temperature automatically appears on the dial. Using the same knob, she then sets the dial for the time specified. A continuous bell-chime signals when the proper time has elapsed.

New "Modern Maid" models include a 30-in. range with a 24-in. oven. Design achieves a 75% larger oven with 16% less floor space. It is said to be large enough to cook two 15-lb turkeys simultaneously, cook enough food for 20 people, or bake eight cakes or pies.

This year's 36-in. "Modern Maid" ranges are available with built-in griddle with removable cover. With the cover in place, center of range has valuable work space.

Tennessee Stove Works

7. Single-Barrel Transport



Dal-Worth Tank Co. is fabricating a single-barrel "step-down" transport, which is a single tank having a short section at the front with a smaller diameter than the rear section. The unit has a capacity of 7100 gal.

This unit, manufactured of a light, high tensile strength material known as SA-202 Grade B Firebox, is an improvement over older designs, according to the manufacturer. It allows a capacity increase of approximately 250 gal. It permits the mounting of the tandem axle further toward the rear, thereby gaining the necessary distance between the centers of the extreme axles to take full advantage of state gross vehicle weight allowances.

The "step-down" construction allows a lower center of gravity, the heaviest part of the tank being 10 in. lower to the road even though the diameter is larger than the conventional straight-barrel.

This unit is lighter to pull than a double-barrel unit of just slightly more than half the capacity, clinging to road curves at a higher rate of speed and being easier to pull on hills. There is not as much wind drag or side-sway as with the double-barrel units.

Dal-Worth Tank Co.

8. Relief Valve Manifold

Four complete valves are provided in the Series 7564 L. P. gas relief



For notices of more new products and trade publications turn to page 150 of the Power Section.

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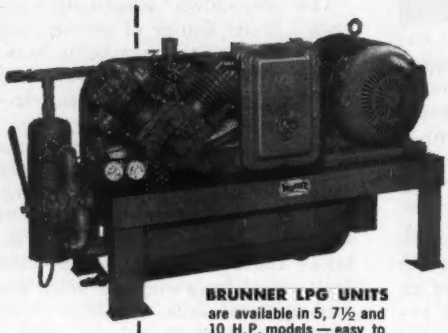
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BRUNNER LPG UNITS are available in 5, 7½ and 10 H.P. models — easy to install, easy to service.

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WRITE FOR FREE BOOKLET *that shows how to set up a highly efficient "tank car to storage" transfer system — describes the many safety and long life features of Brunner LPG Units.*

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valve manifold, according to the manufacturer, with any three affording a combined capacity of 27,750 cu ft of air per minute, or more than ample for a 30,000-gal. container. Because of a patented shutoff system, one relief valve can be removed for test or replacement at any time without affecting the operational performance of the storage tank or the other three relief valves. Construction of the big manifold is said to be rugged and heavy duty throughout; the body is cast steel while the relief valves are steel with brass liners.

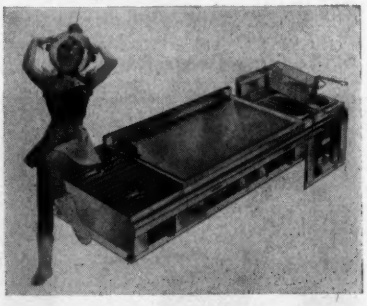
The Rego Series 7564 relief valve manifold is listed by Underwriters Laboratories.

Rego division,
The Bastian-Blessing Co.

9. Commercial Cooking Console

Star Manufacturing Co. has announced a "Star-Master" matched line of gas equipment. The new gas line, featuring modern design, includes a counter fryer, floor fryer, a 36-in. and 24-in. griddle and a gas hot-plate.

The gas fryers have a one-piece drawn plated kettle and are designed



for easy cleaning. Efficient operation assures longer life to fat. Modern good looks are provided by the stainless steel body, which resists tarnishing and corrosion.

Gas griddles are made with a heavy duty, highly polished steel plate griddle that assures fast heating and prevents warping and cracking. There is no waste of cooking surface. The 36-in. griddle offers 600 sq in. and the 24-in. griddle 380 sq in.

Gas hot-plate makes all kinds of counter cooking possible. It is equipped with two burners, each individually controlled, and is a perfect match to the griddles.

The Star Manufacturing Co.

10. Cylinder Hand Truck

Designed for safe, smooth, easy handling of gas cylinders up to 30 in. in diameter and weighing up to 1000 lb, the Moellenbrock & Wilke Model



Top Quality...Top Value

TOPS IN DRYNESS

Toppers are available in standard sizes from 1150 to 500 gallons w.c., and in other sizes on special order: tell us your requirements and quantities desired. The Pro-Ball, 115-gal. spherical system with top-mounted fittings, is another top value by United.

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Toppers are delivered to you by our own trucks, direct from our plants in Freeport, Ill., or New London, Minn. Spray-painted, bone-dry, complete with all fittings and ready for operation; guaranteed to meet all State and National safety requirements—ASME inspected and UL approved.

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Standard Cylinder Truck available with 10 x 2:75 tires in two types.
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MODEL 900 — Designed for safe, smooth, easy handling of gas cylinders up to 30" in diameter and weighing up to 1000 lbs. Roller bearing wheels; 12" pneumatic tires.....$50.00

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WASHINGTON, MO.



900 cylinder truck combines lightness with extreme strength and mobility.

Constructed of electrically-welded 1¼-in. steel tubing, measuring 27 in. in over-all width and fitted with 64-in. handles, this truck weighs exactly 50 lb.

Roller-bearing wheels, fitted with 12-in. pneumatic tires, make for ease of handling. A chain, adjustable to accommodate all sizes of cylinders, is provided to anchor the load and prevent weight shifting.

Moellenbrock & Wilke

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★ Peak shaving and augmentation
★ 100% Town or plant supply

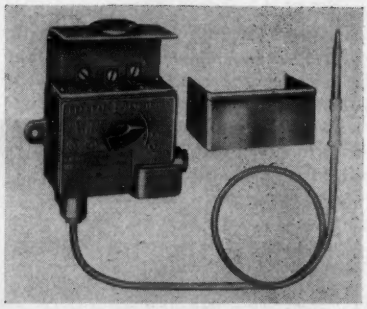
A Packaged Draketown Propane Plant will help you reduce demand charges; provide a supply of gas during curtailment periods... at the turn of a valve... or supply that outlying section or plant 100% if desired.

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11. Thermopilot Relay



General Controls Co. is producing a rotary reset thermopilot relay for automatic safety shutoff of gas-fired appliances.

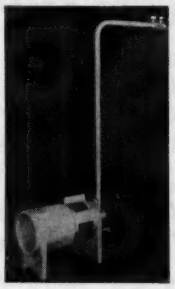
When used with an electric valve in the main line, the relay with pilot valve provides 100% shutoff, without reducing the manifold capacity, by the addition of a pilot safety valve. The less expensive relay without pilot gas valve can be used when 100% shutoff is not required.

The design of the A-100 rotary reset thermopilot relay assures safe lighting conditions and gives visual indication of the valve's position.

When the knob is turned to off position, the gas flow to both the main burner and the pilot light stops

General Controls Co.

12. Tar Kettle Burner



Weldit Inc. announces its new T-3 "Melterama" tar kettle burner. The Melterama features both high and low heat control, air shutter flame control and Weldit's replacable burner orifice, an improvement in design, assuring added efficiency and longer life.

Used with the Weldit 4826-D safety check or high pressure regulator, the Weldit Melterama gives instant, clean, controlled heat for all melting jobs. Ruggedly built, the cast iron base and steel and brass burner are incorporated into one unit for stability and convenience.

Weldit Inc.

13. Brooding Guide

A comprehensive, 24-page booklet outlining and illustrating in full detail the steps necessary to real brooding economy is now available from the Oaks Manufacturing Co.

The pamphlet is filled with pictures

AMPSTEEL
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FRAMELESS TRAILER TRANSPORT TANKS
Lighter weight for greater payload.

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Standard or Custom built.

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Fittings recessed for safer and easier handling.

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Work-Saver Pipe Tools

of various brooders, with explanations of their special features and advantages. All methods of brooding are explained and recommendations made for the types believed to produce the best results.

Specially described are the Oaks suspension-type; the "Comfort Spot" semi-warm-room type, and the drum-type for semi-warm room brooding. All models are equipped with Robertshaw automatic safety shutoff valves.

Many valuable brooding suggestions are given in the booklet, including the comparative thermal values of various fuels.

Oaks Manufacturing Co.

14. LPG Valves

Valves for positive control of L.P. gas are described in a recently published folder by the Ohio Injector Co. Included are pressure-temperature ratings, general dimensions, and photos of typical installations of the UL-approved valves.

Also, for the convenience of dealers is the new folder for OIC lubricated plug valves, and this sets out the important features, general dimensions, service recommendations, and specifications.

Ohio Injector Co.

15. Water Heater Mailer

An attractive self-mailer for use of plumbing contractors, utilities, L.P. gas distributors, and appliance dealers to acquaint their customers with the new Ruud Alcoa alloy standard gas water heaters is available from Ruud Manufacturing Co.

Containing space for addressing and postal mark on the front and for dealer imprint on the back cover, the two-color folder presents an easy-to-read description of the water-heater's features. Also shown is a cutaway drawing of the Ruud Alcoa alloy model.

The consumer literature discusses elimination of rusty red hot water by the moderate-priced unit. A performance-rating sizing guide facilitates selection of the proper model.

Ruud Manufacturing Co.

Correction

In the April issue, page 95, product No. 25 concerning a water heater manufactured by Mission Appliance Corp., we said, ". . . the new model features . . . an external flue to *prevent* an uninterrupted coating of glass over the tank interior." This should have said "to *permit* an uninterrupted coating."

5 Reasons why

PHILGAS®

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1 **High Quality Product.** Phillips modern fractionation methods, plus rigid product control tests, insure a clean, uniform fuel with a high thermal content.

2 **Dependable Supply.** Phillips ample storage facilities, modern transportation by pipelines, trucks and tank cars assure you of prompt deliveries of Philgas even in periods of peak demand.

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Phillips 66 Philgas THE ALL-PURPOSE FUEL

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PHILLIPS PETROLEUM COMPANY

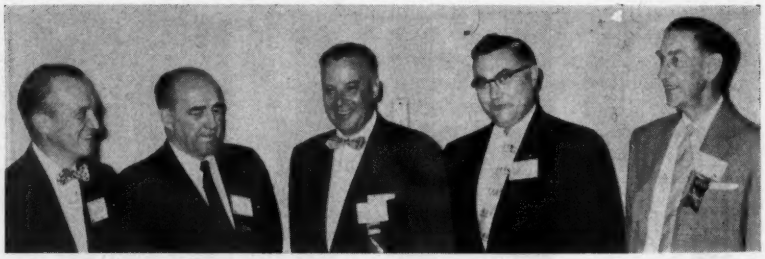
Sales Department • Bartlesville, Oklahoma

Associations

Current activities of national, regional and state liquefied petroleum gas associations.

3000 Attend Largest LPGA Convention at Chicago's Hilton

By Carl Abell • Editor



Officers of the Liquefied Petroleum Gas Association, elected at the May 1-4 convention at the Conrad Hilton in Chicago, are, left to right: W. R. Sidenfaden, retiring president; A. H. Menuet, Skelly Oil Co., St. Louis, treasurer; C. J. McAllister, Parlett Gas Co., Waldorf, Md., new president; K. H. Dickson, Uregas Service Inc., Moberly, Mo., first vice president; and John F. F. MacQueen, Superior Propane Ltd., Toronto, second vice president.

MORE than 3000 people attended the largest convention and trade show ever held for the liquefied petroleum gas industry at the Conrad Hilton hotel, Chicago, May 1-4, by the LPGA.

The trade show occupied the entire exhibition hall on the lower floor, as well as the adjacent corridors, overflowed to the third floor, and was extended to include outdoor showings of trucks and other heavy equipment in the adjacent parking lots.

Nationally known speakers at the luncheons and general session were Clarence Manion, who warned of the hazard to our liberties and to all business resulting from the chipping away of the constitution by government enactments and by executive agreements with foreign powers which take precedence over our fundamental law; Dr. Leo Wolman, who interpreted the changing economic and political factors which affect business; Edmund H. Harding, humorist and philosopher from Washington, N. C., who emphasized that it takes gas to sell gas.

The general session was followed by a symposium headlined "This Is Your Livelihood," which consisted of a report of results of the campaign of the National Council for LP-Gas Promotion, and an outline of the intensified campaign for the coming year. Under the guidance of President James E. Pew, the council has been able to accomplish more not only in advertising but also in publicity activities. This latter phase has been highly successful. This has led to the earmarking of additional funds for publicity work during the coming year.

The meeting of the producers' section brought out the increasing demand for LPG derivatives in the petrochemical industry. It was noted that the temporary oversupply of propane this spring was the result of preparations for a hard winter which failed to develop. Currently there appears to be no appreciable overproduction. During a discussion of additional off-peak markets to level out consumption the importance of increased carburetion activity to help balance the load was emphasized.

The marketers' section was devoted to problems of importance to all dealers throughout the country. The joint responsibility of the dealer and the insurance carrier was spelled out by Wendell Groth of Lincoln, Neb. Charles Corken, Oklahoma

All of these securities having been sold, this advertisement appears only as a matter of record.

White River Propane Gas Company, Incorporated

$400,000 6% Convertible Debentures

(Series A)

Dated April 1, 1955 — Due April 1, 1965

PRICE: 100% Plus Accrued Interest

50,000 Shares Common Stock

(Par Value $1.00 Per Share)

PRICE: $6 Per Share

Underwriter

EISELE & KING, LIBAIRE, STOUT & CO.

Established 1868

Members of New York Stock Exchange
50 Broadway

Members of American Stock Exchange (Assoc.)
New York 4, N. Y.

April 24, 1955

Easy-to-demonstrate features make DETROIT JEWEL

a "Best Seller!"



Detroit Jewel is a sure best seller with today's modern-minded housewife who wants only the finest work-saving features.

Detroit Jewel features practically demonstrate and sell themselves. Handy Signa-Dials that tell at a glance which burners are on and how high. Extra-large oven that handles the largest roaster with ease. Smooth, handsome, easy-to-keep-clean lines.

Detroit Jewel is packed with features that sell and sell and sell! Remember, your profit margins soar when you put Detroit Jewel on the floor.

Look at this terrific sales line-up:

- Electric clock and 4-hour timer
- Two convenience outlets
- Titanium porcelain finish
- Fiberglas insulated oven
- Chrome plated oven racks
- Recessed toe room base
- Flush-to-wall construction
- Broiler pan with separate smokeless grill

With Detroit Jewel . . .
Demonstration means Compensation!

DM PRODUCTS

DETROIT JEWEL

Products of the Detroit-Michigan Stove Co.
Detroit 31, Michigan

Makers of the
Famous Detroit Jewel Incinerator

City, outlined the profit possibilities arising from more efficient transfer of fuel into and out of storage and bulk delivery tanks. P. E. Gray, Tulsa, presented the current data on fuel testing, differentiating between the essential tests which can only be made at the refinery and shipping point and those which are possible and useful at the marketing point. He appended a four-minute statistical picture of the power fuel market.

Walter Kraus, North Bend, Ore., who claims to be a country boy who knows nothing about advertising and sales promotion, gave the most dramatic talk of the day about how to use common sense and the available facilities to put better living with L. P. gas into the high volume class with Cadillac- and Tiffany-type customers.



Some of the 3000 people who flooded the trade show exhibits at the Conrad Hilton in Chicago. The trade show occupied the entire exhibition hall on the lower floor and overflowed to the adjacent corridors, parking lots, and upper floors of the hotel.

Appliance manufacturers and equipment manufacturers sections had their own meetings to discuss their respective problems.

The board of directors approved and authorized the publishing of a filling station directory, after receiving advance commitments indicating the financial feasibility of the project. Work on assembling the data is to proceed at once.

Recognizing the current high interest in the power fuel activity, the board referred this matter to the organizational committee for study. A recommendation of a program to meet the needs is to be given at the September meeting of the board.

The insurance committee, under the chairmanship of R. Maloney, Calor Gas Co., was instructed to proceed with plans for a group insurance plan for the association, which all state associations will be invited to join. The committee was authorized to choose an administrator, and to name the insurance firm that will handle the project. Trustees of the insurance fund will be A. H. Bone, Malvern, Pa.; A. H. Menuet, LPGA treasurer, and the chairman of the finance committee, who has not yet been named. Chris Neely will serve as secretary of the trustees.

The Gas Fuel Technology Committee has been given status as a standing committee of the association.

The proposal of William S. Brenckle for an assessment of ½ cent per gal. for advertising was referred to


NEW!
ACCOUNT-BUILDING
MEDIUM-DUTY
TORCH
RANSOME 81
This, brand-new RANSOME 81 torch is packed with sales features. Weighs only 1¼ lbs., has well-balanced workman-like "feel" that reduces arm weariness. Flame stays at heat set by operator—high winds won't blow it out. Can be used in any position without danger of fuel spilling. Ideal for tight, awkward spots. Lights instantly without pumping, priming or pouring fuel. Priced 15 to 33⅓% below comparable, competitive torches.
Real Business Builder because RANSOME torch users buy LP-Gas year-round, usually in small, premium priced containers...soon become prospects for other industrial and home appliances.
14½" long, tubular steel head 1½" dia., 45° angle, 1¼ lbs. Burns 6 hours on gallon LP-Gas at 10 lbs.
SELLS TO
Plumbers
Pipe fitters
Sheet metal workers
Ranchers
Asphalt tilers
Garages
Foundries
FOR
Melting lead joints
Sweating large streamline fittings
Lead wiping
Melting babbitt
Light preheating
Core drying
Laying and shaping asphalt tile
TRADE PRICE
$9.80
F.O.B. FACTORY
See for yourself... stock the NEW RANSOME 81 TORCH NOW!
RANSOME COMPANY
Liquified Petroleum Gas Division
ROOM A7 • 4030 HOLLIS STREET • EMERYVILLE, CALIF.
38
Ransome

One look and your customers will know

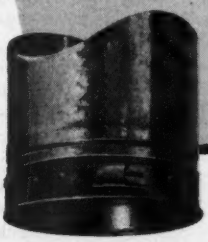
THIS IS IT!

The finest gas vent made. Correctly engineered — manufactured to high standards of quality by modern production methods and machinery. Your customers can see the difference.

RV METALBESTOS ROUND GAS VENT

Companion product to WV Metalbestos oval vent.
Backed by the most extensive gas venting research ever conducted. For the first time, a complete venting system as finely engineered as today's most modern gas equipment.

- **New Rota-Lock coupler — simple, safe, locks permanently yet is easy to unlock — not a friction or snap lock.**
- **New steel outer jacket — safer, stronger.**
- **Efficient, fast-heating aluminum inner pipe.**
- **Improved double-wall, air-insulated design.**
- **Requires about 15% less space than any other gas vent.**





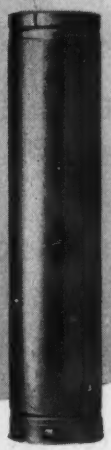
THE ROTA-LOCK COUPLER*
an exclusive
METALBESTOS feature

- a slight turn and it locks—permanently
- another easy turn and it unlocks (saves fitting time during installation)
- no tools or screws—no cement or mastic





* Patent Pending



RV Metalbestos is furnished in a complete line of pipe and fittings — 3" to 6" diameter.



RV Metalbestos is listed by Underwriters' Laboratories as a Type B vent for venting approved gas appliances. (Not for use with oil-burning appliances or gas-fired incinerators.)



METALBESTOS DIVISION
WILLIAM WALLACE COMPANY · BELMONT, CALIF.

Stocked by principal jobbers in major cities. Factory warehouses in Atlanta, Dallas, Philadelphia, Des Moines, Chicago, New Orleans.

the publicity and publications committee. Under the proposed plan this fund is to be administered and dispersed through the national association, one-fourth to be allocated to the LPGA operational budget, one-fourth to the National Council, and the remaining one-half to local level advertising.

New officers of the association are C. J. McAllister, Parlett Gas Co., Waldorf, Md., president; Ken H. Dickson, Uregas Service Inc., Moberly, Mo., vice president; A. H. Menuet, Skelly Oil Co., St. Louis, treasurer; and John F. F. MacQueen, Superior Propane Ltd., Toronto, second vice president. Staff members holding office in the association were re-elected.

Montana Meet Devoted to Tractor-LPG Dealer Bond

Devoting its 1955 convention to the promotion of cooperation between Montana tractor dealers and L.P. gas dealers, the Montana LP-Gas Association met recently at the Hotel Finlen in Butte. All tractor dealers in the state were invited to the convention as guests of the association.

The program was designed to sell tractor dealers on the advantages of L.P. gas as tractor fuel. Following an opening talk by Association President Tom Bird, the convention got underway with a talk by R. M. Bond of Calor Gas Co., San Francisco, on "Propane Tractor Fuel—It's a Natural." This was followed by a talk on LPG carburetion by L. G. Smith of Ensign Carburetor Co., Portland, Ore.

After the two talks an open forum was held with Tom Bird as moderator.

The second day of the convention was devoted to a business meeting which included a discussion of freight rates, insurance, and proposed regulations.

Final speaker on the convention slate was W. A. Brown of the Montana Petroleum Industries Committee, who gave a talk on "Federal Regulation of Natural Gas—an Unprecedented Curb on Free Enterprise."

Entertainment at the convention included a hospitality hour and banquet.

Four Hundred Attend Western Liquid Gas Meet

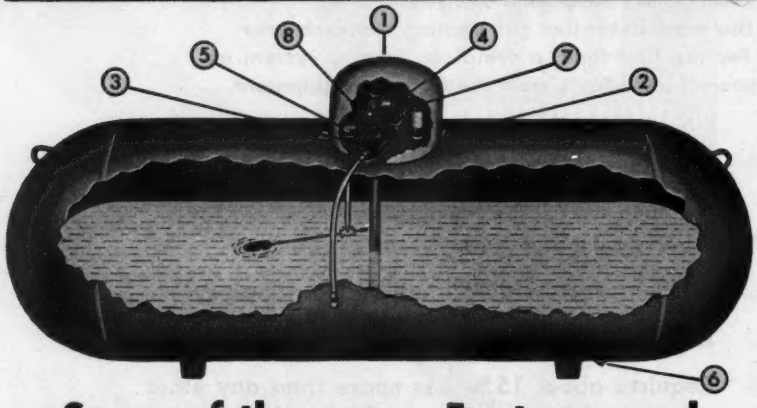
Western Liquid Gas Association's sixth annual convention and trade show was held at the Hacienda hotel, Fresno, Calif., April 18-19. Nearly 400 participants and guests were registered.

Features of the convention program were beamed particularly at the problems almost universally encountered by dealers. These included "Salesmanship Is Showmanship," by Erwin S. Kleinman, Dearborn Stove Co., Dallas; "What an Employe Expects From His Employer," by Jack Bradshaw, Annan's Butane Service; "Applications for Increasing Summer Load," a symposium on agricultural burning and open-air heating for crop protection, by Ben Brunner, Manchester Welding, Kenneth Kennipohl, Lancaster Gas Co., and M. R. Robinson, Robinson Blower Engineering Co.; "New Fields to Conquer," by Don McNary, Calor Gas Co.; "Financing L. P. gas Storage at the Consumer Level," by Charles T. Beaird, J. B. Beaird Co.; "Ten Important Factors for Promoting L. P. gas Carburetion," by Lathrop B. Flinton, Century Gas Equipment Co.

Entertainment features included a barbecue steak dinner, chuck wagon breakfast, luncheons, a tour of Fresno including a visit to the Roma winery (with samples) for the ladies, and a banquet followed by a floor show and dancing.

Officers elected for the coming year were E. C. Brown, Santa Rosa, presi-

Economy LP-GAS SYSTEMS



Some of the many Features and Qualities of Economy Systems

1. ONE PIECE STREAMLINE DOME!
2. STURDY DETACHABLE HINGE!
3. LARGE ORFICE REGULATOR!
4. LIQUID TAKE-OFF, BUILT-IN EXCESS FLOW!
5. FLOAT GAUGE, REPLACEABLE SNAP-ON DIAL!
6. BOTTOM PLUG FOR LIQUID, OR CLEAN OUT!
7. LIQUID LEVEL OUTAGE GAUGE!
8. PRESSURE GAUGE OUTLET!

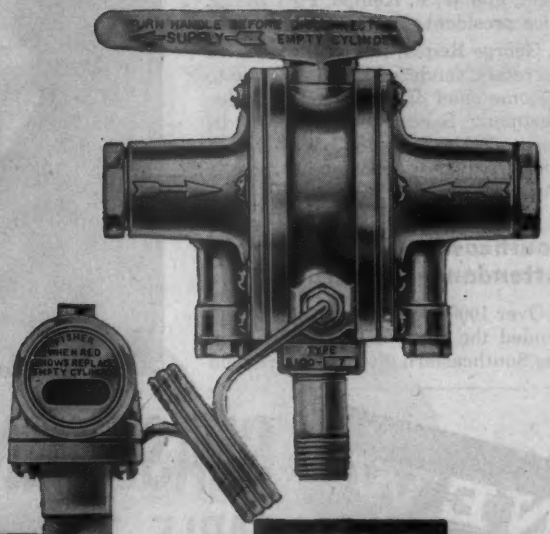
SEE US BEFORE YOU BUY!

Economy Truck Tanks, Transports, Skid Tanks, Anhydrous Ammonia Tanks and all types of Steel Fabrications.

DALLAS TANK COMPANY, INC.
201-5 W. Commerce Street • P. O. Box 5387
DALLAS, TEXAS

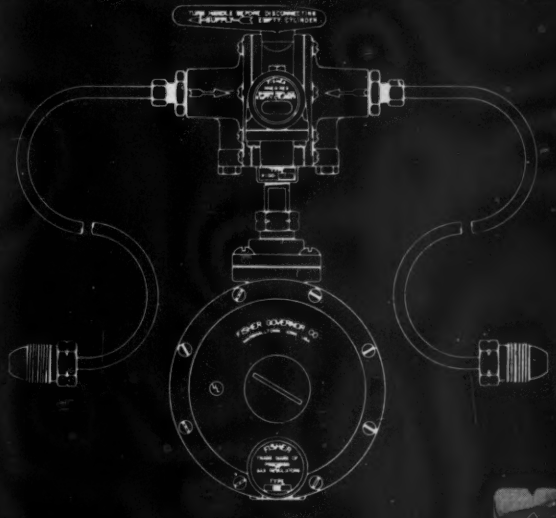
FISHER®

New Automatic Changeover Regulator Offers Any Combination You Need



R100-7

Automatic changeover manifold with Big Flag remote mounted indicator, inverted flare inlet connections and ¼" male pipe thread outlet connection.



Showing conversion from a single cylinder Type 922 to a complete automatic changeover assembly using the Type R100-1 manifold and two K240 pigtails.

MEMBER national LP-GAS PROMOTIONAL program



R100-4

Automatic changeover manifold with Big Flag direct mounted indicator, female POL inlet connections and male POL outlet connection.

OTHER AVAILABLE CONSTRUCTIONS:

- R100-2 Remote Mounted Indicator; Inverted Flare Inlet; Male POL Outlet
- R100-3 Remote Mounted Indicator; POL Inlet; Male POL Outlet
- R100-5 Direct Mounted Indicator; POL Inlet; ¼" Male Pipe Thread Outlet
- R100-6 Remote Mounted Indicator; POL Inlet; ¼" Male Pipe Thread Outlet
- R100-8 Direct Mounted Indicator; Inverted Flare Inlet; ¼" Male Pipe Thread Outlet
- Capacity: 120 cfh Propane

FISHER GOVERNOR COMPANY • MARSHALLTOWN, IOWA

LEADS THE INDUSTRY IN RESEARCH FOR BETTER GAS PRESSURE CONTROL

FISHER Our 75th ANNIVERSARY

dent, and W. F. Kempe, Fort Bragg, vice president.

George Requa, formerly executive secretary, tendered his resignation to become chief of the Arcade fire department, Sacramento. He will be succeeded by Douglas C. Westerhout, formerly safety consultant for the Fresno County Safety Council.

Southeastern Conference Attendance Over 1000

Over 1000 members and guests attended the three-day conference of the Southeastern district LPGA, held recently at Boca Raton, Fla. The Boca Raton hotel and club served as the group's headquarters.



Earl W. Gammage, left, president of Pan American Fire & Casualty Co., presents a certificate of meritorious achievement to the Alabama LP Gas Association. Receiving the award on behalf of the association are B. H. Stallworth, center, president, and John W. Rooney, executive secretary. Presentation took place at the Southeastern district LPGA meet.

"Less Pessimism—Greater Activity" was the theme of the convention. C. T. Burg, vice president, sales, Iron Fireman Manufacturing Co., Cleveland, was the first scheduled speaker at the meeting, delivering a message on sales.

Other convention speakers included E. J. Casper, general sales manager, Bemidji (Minn.) Bottle Gas Co. who gave a talk titled "You"; M. L. Trotter, president, Carolina Butane Gas Co., Columbia, S. C., who talked about operating costs. Mr. Trotter has spoken on the subject of costs at numerous meetings across the country and uncovered many hidden ways to waste money. His "bread and butter" talk gave conventiongoers ideas for cutting operating costs.

Association members from more than 38 states attending the fifth annual conference also attended the trade exhibit, which featured an array of appliances and equipment coming from many areas of the country. LPG dealers had a chance to study the most up-to-date facilities available for their operations.

Convention entertainment included a dinner at the Cabana club the first evening of the meeting with steaks highlighting the menu and a Pete des Jardins water show following the dessert.

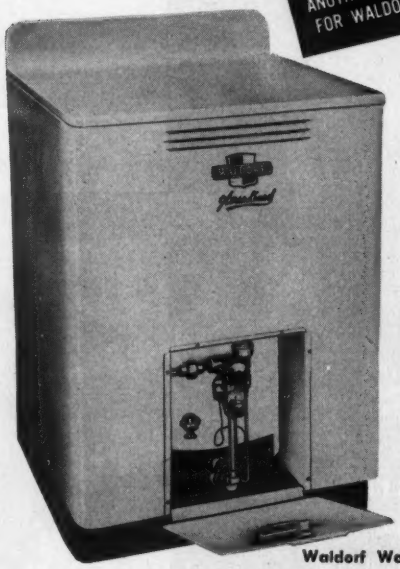
A "Southeastern District Gassers Handicap" was a special event of the second day, during which golfers played the Boca Raton course. Tro-

NEW

GLASS LINED TABLE TOP L-P GAS WATER HEATER!

- 30 GALLON SIZE (25" X 25" X 36")
- FITS FLUSH AGAINST WALL
  Install in line with sink and other kitchen cabinets.
- A MODERN HEATER ... FOR A MODERN KITCHEN
  High gloss baked enamel jacket... porcelain enamel top.
- FIBREGLAS INSULATION
  Keeps heat in... outside cool.
- 10 YEAR WARRANTY
  Unconditional for 5 years... prorated 6th to 10th year.
- APPROVED
  By American Gas Assoc.

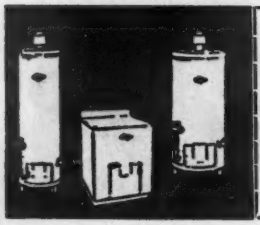
ANOTHER FIRST FOR WALDORF



Waldorf Water Heaters are also available in round 20, 30 tall, 30 short, 40 and 75 gallon sizes.

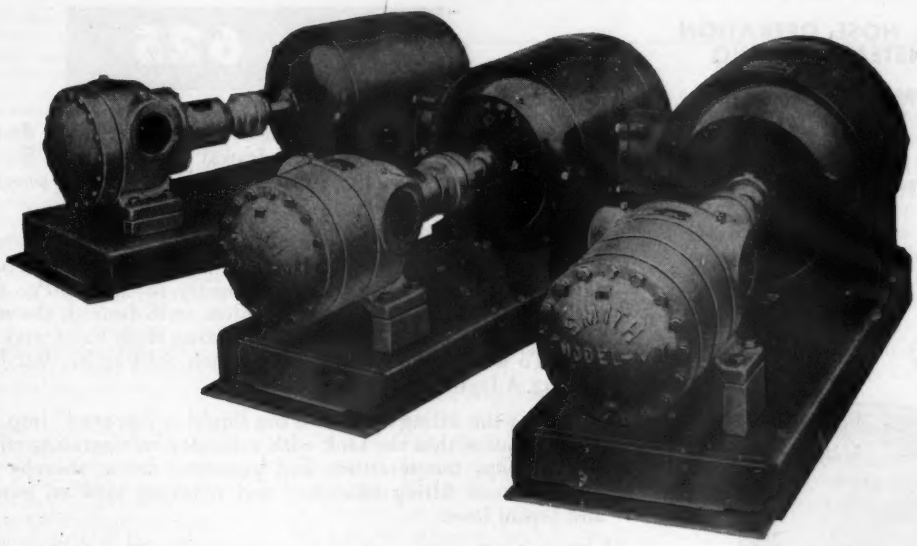
THEY'RE SELLING *FAST!*

..AND WALDORF IS THE FIRST TO MAKE THEM AVAILABLE!



WALDORF-HEATER COMPANY, Dept. 6
1421 Chestnut St., Philadelphia 2, Pa.
Tell me more about your GLASS-LINED TABLE-TOP GAS WATER HEATER.
NAME_____
STREET_____
CITY_____ STATE_____

SIMPLICITY ITSELF!



Simplicity of design generally means better service. Smith Pumps are engineered to eliminate all possible features that may require adjustment, lubrication or other servicing attention. There are no packings to leak and no packing adjustment is ever required. No built-in bypass valve (sometimes called safety or relief valve) to cause vapor-lock troubles. Smith Pumps are direct connected to motor or power take-off, no outside gears, chains or belts are needed. No lubrication of any part of the pump is ever required. Pumping elements are balanced and self-adjusting, no rotor adjustment necessary. There are no gaskets or O rings in pump joints; precision metal to metal fits in Smith Pumps never leak even on 1000 Pound test. Write for prices and latest descriptive literature on these and seven other models.

SMITH

PRECISION PRODUCTS COMPANY

1135 MISSION STREET • SOUTH PASADENA • CALIFORNIA • PHONE PYRAMID 12293

NEW SEL-PAC FILLING and LIQUID WITHDRAWAL VALVE

sel-pac

ONE HOSE OPERATION INSTEAD OF TWO

ELIMINATES COSTLY VAPOR LINES

FILLS FASTER, SAFER AND WITH LESS PRESSURE BUILD UP

UL Underwriter's Laboratories Approved

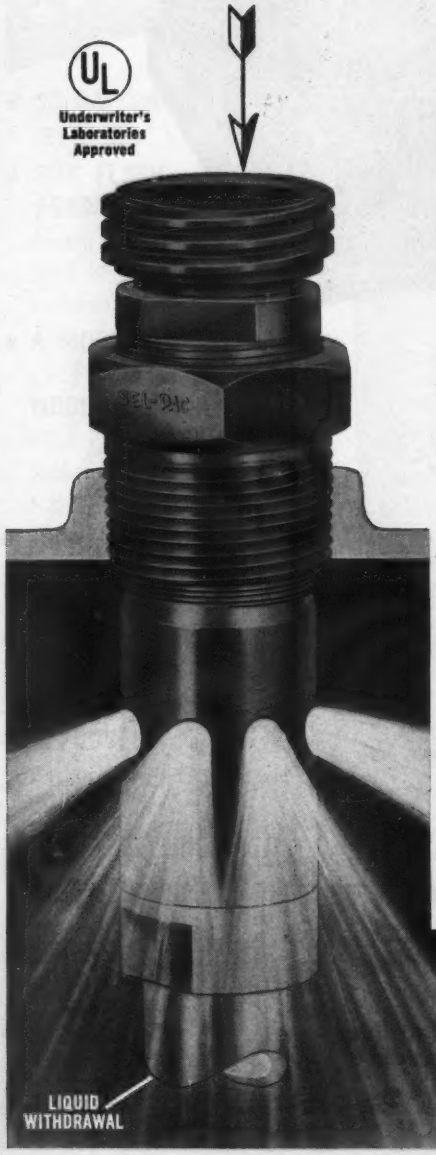
No. 625

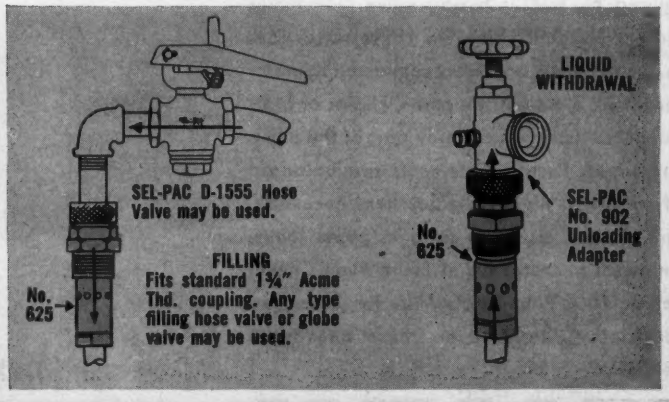
Here is a brand new concept, a new principle, in the design of LP-Gas filling and liquid withdrawal equipment. Be first to adopt this new valve. Request your tank supplier to provide the SEL-PAC No. 625.

Enjoy the ease and economy of one hose operation instead of two. Eliminate vapor return valve and costly vapor return equipment. To fill, you connect directly to the Sel-Pac 625 with your present line and hose valve, or if desired, the new Sel-Pac D-1555 Quick Filling Self Bleeding Hose Valve may be used. To withdraw liquid, simply attach Sel-Pac No. 902 Unloading Adapter. See diagram.

During the filling operation the liquid is "sprayed" into the vapor space within the tank with a decided refrigerating effect which keeps temperatures and pressures down, thereby increasing tank filling efficiency and reducing load on pumps and liquid hose.

This Sel-Pac No. 625 Valve incorporates the double seat principle used in other Sel-Pac Fill Valves PLUS the addition of Sel-Pac's exclusive features designed for unloading or withdrawal. Foolproof in construction and easily dismantled for inspection if desired, this valve is ruggedly built and carries UL Approval. Available in 1¼" standard pipe connection. Write today for prices and delivery.





Selwyn-Pacific Company

340 West Avenue 26, Los Angeles 31, California

(ADVERTISEMENT)

THE VAPOR SPRAY FILL VALVE--A NEW CONCEPT IN TANK FILLING



by
GEORGE R. POSTLEWAIT
President,
SELWYN-PACIFIC COMPANY

The conventional method of transferring fuel from a bulk tank truck to a domestic tank operates on the theory of using a filler valve on the domestic tank to which is attached the liquid hose line coming from the pump on the truck and then facilitating the transfer of this liquid by equalizing the pressure of the two tanks by the use of a vapor return line connected between them. Although there is certainly nothing wrong with this theory, it does begin to bear weaknesses as far as the gas dealer is concerned when a driver decides it is not necessary to connect the vapor return line and by overworking the pump sufficient pressure will be built up to push the liquid into the tank without equalizing the pressure. This is costly in wasted time and in wear and tear on equipment.

The principle involved in the new Selpac #625 liquid spray filler valve takes advantage of some facts we have known for a long time, namely, that less head pressure is developed in the filling of a tank if the liquid is sprayed into the vapor space of the tank, as opposed to forcing the incoming liquid down through a long pipe, and consequently through the volume of liquid already in the tank being filled. A refrigerating or cooling effect is obtained as the incoming liquid fuel under the higher pressure developed by the pump is sprayed or expands through the vapor of the tank being filled. The other very desirable feature of a fill valve is to have a liquid eduction tube so that the liquid may be removed from the tank, should it ever become necessary. The design feature of the type #625 Liquid Spray Valve permits this to be done—in other words, in filling the tank, the liquid is sprayed into the vapor space but in evacuating the tank, liquid is withdrawn from this same valve by the use of an unloading adapter.

We do not mean to imply that the use of this valve would actually result in a lower pressure being developed in the tank than would be had by the use of a large and unrestricted vapor return line, but we do mean to imply that the reduced head pressure resulting from the use of this valve as compared to an ordinary filler valve using no vapor return line, will permit the complete filling of tank without the use of a vapor return hose and with a very reasonable rise in tank pressure, which does not throw an excessive load on the pump and other operating parts.

For actual test comparisons of the new Selpac Vapor Spray Fill Valve versus the old fill method send for Selpac's flow chart on the #625 valve. No cost nor obligation whatsoever.

SELWYN-PACIFIC COMPANY
340 West Avenue 26
Los Angeles 31, California



Newly-elected officers of the Florida LPGA include, left to right: T. Slade, vice president; C. Vetler, director; W. Lee, director; J. Barfield, president; B. Alberty, director; and J. Shatto, secretary-treasurer. Elections were held at the recent Southeastern district meeting in Boca Raton, Fla.

phies were awarded at the annual banquet.

Prizes were also given for the longest fish, the heaviest fish, and the smallest fish caught by members participating in the "Fabulous Florida Fishing Foray."

The annual banquet climaxed the final days of the meeting, with Fred A. Rives, district director of the Southeastern district presiding. Drawings were held for special and grand prizes and entertainment followed.

During the Southeastern conference members of the Florida LPGA held their election for new officers. The new slate includes J. Barfield, president; T. Slade, vice president; J. Shatto, secretary-treasurer, and W. Lee, B. Alberty, and C. Vetler, directors.

The Alabama LP Gas Association was honored at the district convention by the Pan American Fire & Casualty Co. of Houston, which presented the group a certificate of meritorious achievement. Upon presenting the award, Earl W. Gamage, president of the insurance firm, said, "The Alabama LP Gas Association is being singled out because of its outstanding and untiring leadership in the promotion of safety and safe practice among the L.P. gas dealers in the state of Alabama."

The award was received on behalf of the association by B. H. Stallworth, president.

Golf Tournament Opens Mississippi Dealer Meet

The Mississippi LP-Gas Dealers Association annual convention got off to a driving start with a golf tournament played on the golf course at the Edgewater Gulf hotel in Edgewater Park, Miss. The tournament, open to everyone attending the meeting, was a handicap game so that all players had an equal opportunity to take away the prizes. Co-chairmen of the tournament were Mr. and Mrs. Gabby Mittlebronn and Hooker Quick.

Speakers at the convention included Aaron Abramson, who discussed the "Dealer's Responsibility to His Insurer." His talk was part of an hour and a half panel on insurance, safety and the dealer's responsibility to insurers. Other speakers appearing on the panel included F. L. Elkins, discussing the "Value of Employe Safety Training"; Houston Minniece giving "Fundamental Coverages Applicable to an L. P. gas Dealer"; and H. K. Moore discussing "Excess Coverage for L. P. gas Dealers."

"What's Happening to Our Finest Natural Resources?" occupied the convention goers during a luncheon on the third day of the meeting. The talk was given by Dave Grundfest, president of Sterling Stores in Little Rock, Ark., and a brother of Association President Jack Grundfest.

Other topics covered at the convention included financing, the use of radio in LPG distribution, safety, and carburetion.

Blaney Park Site of Michigan Summer Meet

Blaney Park Resort has been chosen as the site of the summer meeting of the Michigan Liquefied Petroleum Gas Association. Located on Michigan's upper peninsula on Highway U. S. 2, Blaney Park is a 33,000-acre resort with three fishing lakes.

The two-day meeting will be held June 30-July 1. Conventiongoers have their choice of hotel accommodations, cottages or motel rooms. The resort operates on the American plan.

Weil Elected President at NGAA Annual Convention

A. H. Weil, general superintendent of the gas-gasoline department, United Gas Pipe Line Co., Shreveport, was elected president of the Natural Gasoline Association of America at its recent convention held in Dallas.

Other members elected vice presi-

dents include H. W. Harts, Warren Petroleum Corp., Tulsa; R. W. Heath, Signal Oil & Gas Co., Los Angeles; W. F. Matheny, Sid Richardson Gasoline Co., Fort Worth, Texas, and George T. Tennison, Shell Oil Co., Houston.

A panel on LPG promotion was held at the first general session of the conference. The subject of the panel, moderated by James E. Pew of Sun Oil Co., Philadelphia, was "This Is Your Livelihood."

Mr. Pew pointed to inroads being made in the L.P. gas market by electricity and declared, "In the face of the threats now imposed by electricity, I'm sure it's obvious to all of us that we have a real job on our hands to hold the big gains the LPG industry has made in the past 10 years."

Mr. Pew saw the answer to the market problem in a greatly expanded promotion program and called upon all association members to support such a program.

At the LPG forum, held the final days of the convention, a paper prepared by W. E. Welch of Warren Petroleum Co., Tulsa, was presented by E. R. Jernigan, as Mr. Welch was unable to attend the meeting. The paper pointed out that the future of L.P. gas as a motor fuel is bright. He based this prediction on the fact that the fuel itself is high octane fuel, without additives, and that engines are only now being developed that can use this fuel effectively.

Harry Thomas of Tuloma Gas Products Co., Tulsa, served as chairman of the LPG forum.

DeVoe Stresses Need To Increase LPG Market

Opportunities available for increasing the L.P. gas market, and the need for taking advantage of these opportunities were stressed in a talk by W. F. DeVoe of Phillips Petroleum Co.'s sales department at the recent Natural Gasoline Association of America convention in Dallas.

Mr. DeVoe pointed out that with the advent of underground storage and greatly improved appliances, the problem of winter-summer imbalance has been greatly lessened. Increased storage at the distributor and consumer levels has simplified the problem so that most dealers no longer need to hesitate about adding a large winter heating account today. In some sections of the country, however, producers must continue to enforce strict summer-to-winter ratios to protect the jobber and the dealer from their own laxity.

A tribute was paid to the manufacturers serving the industry for their constant assistance in selling LPG by continually improving their products and adding new appliances to their lines. Whether their products provide storage, utilization, transportation, or service, they are instrumental in expanding the use of L.P. gas.

Increased competition from electricity and other fuels makes it vital that the industry take the fullest advantage of the help offered it. A dealer in his attempt to sell the people in his area can no longer knock over the easy ones and let the tough ones go. Today he must attempt to sell the tough ones too.

A warning was held out to the producer that he must not relax after the transport has been loaded, but rather must continue to help in the retail end of the industry. He won't get his money unless the retail dealers sell their share of the gas.

The importance of the current user of LPG was highlighted by the fact that the easiest person to whom to sell a new appliance is the satisfied customer. If the customer has been treated the way he or she should have been during the period the dealer has supplied the gas, the sale

SQS
SERVICE • QUALITY • SATISFACTION

A Complete Line of Single and Twin Barrel Propane Truck Tanks

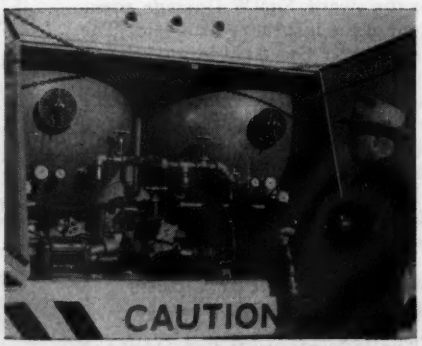


TWIN BARREL

Twin or Single Barrel
Can furnish in any capacity you desire. Stock models or custom made, to your specifications. Just ask the man who drives one.

Transport
Can furnish in single or twin barrel type. Unit constructed so load can easily be shifted to meet different type tractors. Payload makes you money, this is our specialty.

Send Us Your Specifications and We Will Submit Quotations.



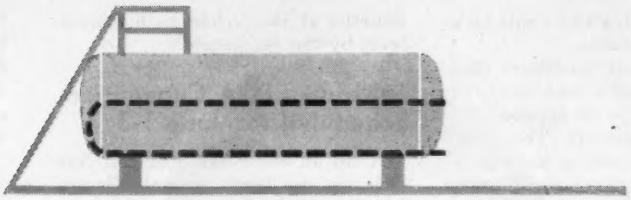
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- Complete Modern Shop Facilities for Mounting and Testing All Pumping, Metering and Propane Handling Equipment.

ANHYDROUS AMMONIA

The Pasley Mfg. & Dist. Co.

Kansas City, Mo. • Tel. Victor 2389



New 30,000 GALLON "SPACE-SAVER" *takes 30% less space*

ONLY acf OFFERS ALL THESE FEATURES

Complete Stress Relieving eliminates stresses set up during forming and welding . . . provides resistance to fatigue caused by temperature changes or pulsating loads.

Complete Radiography of every welded seam assures freedom from slag inclusions, porosity and undercutting.

Hartford Steam Boiler Inspection in accordance with ASME 1952 Code W-XR-SR.

Steel Grit-Blasting of tank exteriors to remove mill scale, resulting in a smooth surface for finest primer.

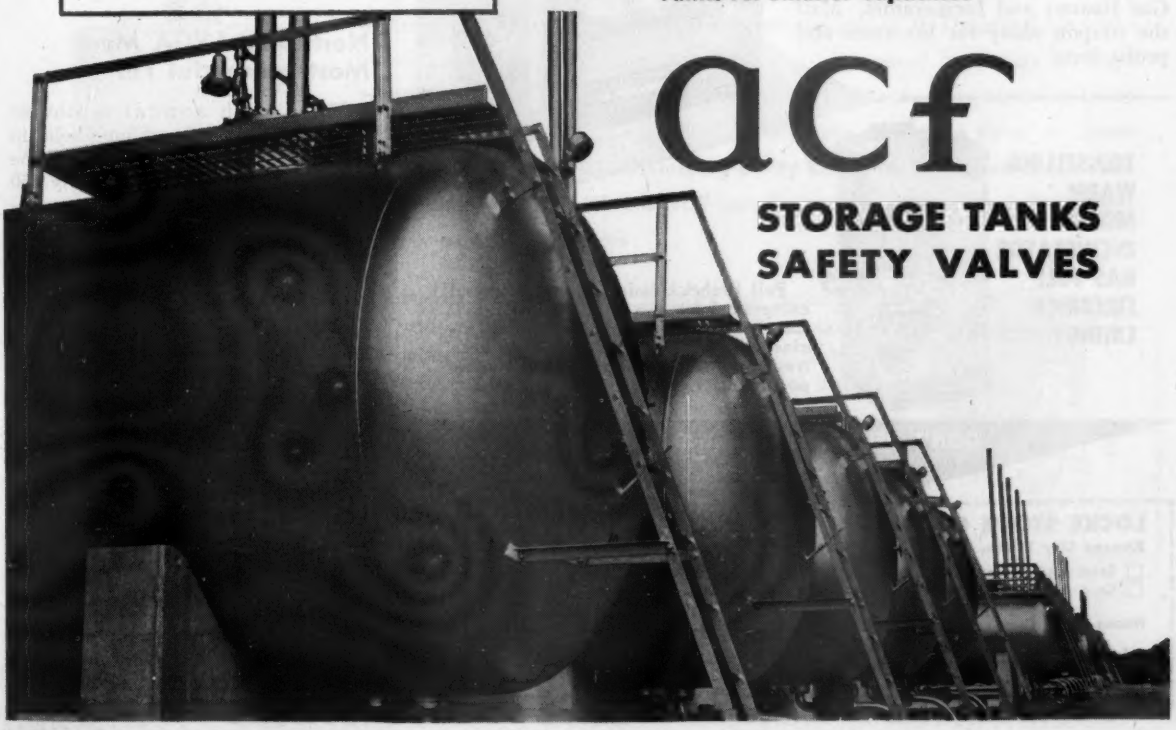
Manway for thorough internal inspections and cleanings.

Steel Saddles and Supports for installation on flat foundations are optional.

Newly designed acf Storage Tanks feature a 50-foot length . . . as compared against the usual 71-foot length of 30,000 gallon capacity tanks. These new larger diameter tanks require far less installation space . . . permit shipment on a single car . . . allow cross-loading on export barges. They weigh only 67,000 pounds, resulting in more economical shipping, rigging, handling, and installation.

acf Tanks are available for L-P gas, anhydrous ammonia, and other gases or liquids under pressure. For more specific details, write or call: Dept. 1-D., acf Industries, Incorporated, Industrial Products Division, 30 Church Street, New York 7, New York.

Proportionately Shorter Tanks for Smaller Capacities



acf

STORAGE TANKS
SAFETY VALVES

of additional appliances will be a snap, Mr. DeVoe claims.

He suggested that producers take advantage of the effectiveness of the "success story" type of approach in signing up new dealers. The more dealers that are working for a producer, the more money he will make, and stories of profit made by other dealers are very helpful in enlisting the business of new dealers.

To Mr. DeVoe, the most important factor in increasing the extent of the LPG industry is "the urge, the push, the guiding hand that must be present at all times and with the greatest impetus at the jobber-distributor level by the marketer."

Missouri LPGA Convention Scheduled for June 1-3

Amid an atmosphere of Old New Orleans, the tenth annual Missouri LP Gas Association three-day convention and trade show will get underway June 1 at the Jefferson hotel in St. Louis. Registration will begin at 9 a.m. on the mezzanine floor.

A gala Mississippi river boat trip aboard the S.S. Admiral, a luxurious river liner, has been scheduled for Wednesday evening. The 12,000 sq ft Blue Salon ballroom will be devoted to dancing to the music of Commodore Hal Havrid and his 16 Cadets as the boat cruises down the Mississippi river.

Speakers scheduled for the convention include Thomas C. Hennings Jr., U. S. Senator from Missouri, who will talk to the convention group about the problems of today's children. His talk is titled "Youth in a Troubled World."

Following a luncheon in the Ivory room of the Jefferson, Al Robertson, a well-known sales training expert, will give conventiongoers nine pointers on closing a sale.

Other speakers will include Alex Dreier, internationally known newsman and reporter, and John Spafford, assistant general manager of the Associated Credit Bureaus of America Inc.

The trade show, which will be open the three days of the convention, will include the latest equipment, appliances, and supplies for the dealer. Two complete, full-size delivery trucks will be on display. A shortwave equipment demonstration is scheduled. The trade show will be held in the Gold Room of the Jefferson.

Closing the convention will be a New Orleans party, buffet and dance in the Boulevard room. French Creole cuisine will be served and guests will dance to the music of Henry Busse and his orchestra.

Northwest LPGA Meet Most Successful Yet

The eighth annual Northwest LPGA district convention, held in Seattle recently, proved to be the most successful yet held. Nearly 350 industry members attended, representing Alaska, western Canada, and the several western states. Members from California attended in greater numbers than ever before.

The speaking program on April 1 was headlined by the national LPGA president reporting on association affairs. Rex Allison, president, Bon Marche, gave a talk on merchandising while Oliver Johnson, chief fire protection engineer, Standard Oil of California, presented a demonstration on the characteristics and handling of L.P. gas. Talmadge Lovelady, president, Pure Gas Service, Worland, Wyo., spoke on "The Place of Metered L.P. gas Service"; and A. E. Horn Jr, manager of refinery sales, General Petroleum Corp., reported on "Pacific Northwest Petroleum Developments."

You'll make more money selling Warm Morning® products!

WARM MORNING Gas Heaters • WARM MORNING Incinerators

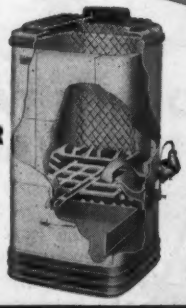
Here's why these two products sell faster, make more money for you . . .

1. Your customers are pre-sold on the name, Warm Morning. They know and respect the quality found in all Warm Morning products.
2. Warm Morning knows how to build in special features that appeal to your customers and make your cash register ring!

Find out how *you* can make more money selling Warm Morning LP-Gas Heaters and Incinerators. Mail the coupon today for literature and profit facts!



TOP-SELLING WARM MORNING INCINERATOR HAS FULL FIREBRICK LINING!



Full firebrick lining is one of several exceptional features of the Model L-17T that has made it the fastest-selling incinerator on the market! Burns both trash and wet garbage. Offers terrific potential!

DON'T DELAY! DETACH AND MAIL COUPON TODAY!

LOCKE STOVE COMPANY
Kansas City 5, Mo.

☐ Send me complete information on Warm Morning LP-Gas Heaters!
☐ Send me complete information on Warm Morning LP-Gas Incinerators!

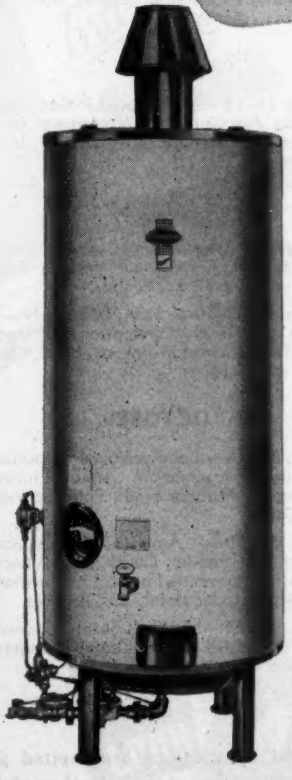
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What Capacity!





UTILITY CIRCULATOR MODEL **Automatic Gas Water Heater**

Fits the job and helps you get it! Install Utility's large-capacity Circulator where the demand is for clear hot water and lots of it. Designed for commercial service, the Circulator is efficiency-engineered by Utility for high recovery and long life. It's always in hot water—because of features like these • **self-contained storage capacity** • **multiple circulating flues** • **inner tank circulators** • **rust-eliminating Utility Kem Rod** • **convenient clean-out opening** • **50, 75 and 100 gallon sizes to operate as independent units or as booster heaters**

Dependable Utility water heaters can make friends for you on all your jobs—commercial and domestic. See your Utility water heater jobber or distributor or write for information on the full-model line.





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Automatic Gas Ranges

UTILITY
Furnaces • Air Conditioners
Air Coolers • Water Heaters

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TRADE MARK
AUTOMATIC GAS WATER HEATERS

UTILITY APPLIANCE CORP. 4851 S. Alameda St., Los Angeles 58, Calif.

Legislative reports were given on April 2 by J. C. Yeomans, L. V. Rothrock, and Henry B. Morris, from the states of Oregon, Idaho, and Washington respectively.

Speakers during the second day included R. H. Mahnke, manager, district offices, LPGA, Chicago, on "Dividends From Collective Efforts"; Wilton Jackson, Northwest Fabricators, Nyssa, Ore., on "The Easy Way to Build a Summer Load"; Frank Alberti, district engineer, Fireman's Fund Insurance Group, on "Men, Machines, and Insurance Costs"; and M. A. Ennis, LPGA district secretary, who reported on district progress.

The assembled delegates heard C. W. Steele, residential sales manager, Portland (Ore.) Gas & Coke Co., speak on "Splitting the Selling Atom,'" following the Saturday luncheon.

C. M. Ambrose, LPGA district director, was chairman of the convention. In addition to the luncheons and dinner, a cocktail hour and floor show were held.

Special entertainment for the ladies attending the convention included a KOMO-TV studio tour and a special friendship hour. Ladies were taken to the studio on propane-powered buses.

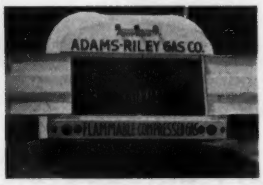


TRUCK TANKS

- TWIN OR SINGLE BARREL
- FULL OR SEMI-STREAMLINED
- DELIVERY TRUCK TANKS
- TRANSPORT TRUCK TANKS

Tailored to fit your needs!



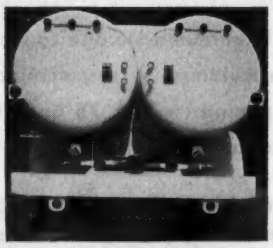


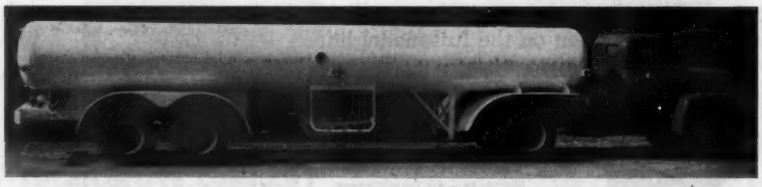
1600 W.G. Twin Truck Tank 41" dia. x 161" O.A.L. on 172" W.B. International. Rego fittings. ICC Lights and Wiring. Streamlined skirting. 3-Way Piping. 20# Foam Fire Extinguisher. 100-ft. 1" Hose. 50-ft. ½" Hose. Neptune Print-O-Meter. K-190 Viking Pump.

"After shopping around, we decided to have your company install a 1600 gallon twin tank on our new RP170 International. When the truck was delivered, it was more than we really expected in appearance, balance, safety and service. Considering the beauty of the unit, as well as the low price, we feel that we have the finest propane delivery unit available."

That's one of our customers talking . . . and there's plenty more like him. We'd like you to be a satisfied customer, too. We'll build tanks exactly to your specifications, or design a unit to fit your individual needs. Let's talk it over!

Get our offer before you buy . . .
Call us COLLECT today!





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SAPULPA, OKLAHOMA

Call us:
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Tulsa 50-8500

Write us:
P. O.
Box 391

CALENDAR

Coming events in the Industry

JUNE

June 1-3 — Missouri LP-Gas Association. Annual convention and trade show, Jefferson hotel, St. Louis.

June 4-6 — Arkansas Butane Dealers Association. Annual convention, Hotel LaFayette, Little Rock.

June 5-7—Mountain States District, LPGA. Annual convention and trade show, Hotel Colorado, Glenwood Springs, Colo.

June 6-8 — Institute of Appliance Manufacturers. Twenty-third annual convention and exhibit, Netherland Plaza, Cincinnati.

June 6-15—Fourth World Petroleum Congress, Rome, Italy.

June 19-22 — LPGA District No. 2 (Southwest). Management school, University of California, Berkeley.

June 22-24 — Texas Butane Dealers Association. Tenth annual convention and trade show, Adolphus and Baker hotels, Dallas.

June 27-28—Wyoming LPGA. Annual convention, Hotel Townsend, Casper.

June 30-July 1—Michigan LPGA. Summer meeting, Blaney Park resort, Blaney.

JULY

July 11-13—Mississippi LP-Gas Dealers Association. Management seminar, University of Mississippi, University.

AUGUST

August 7-9—Kentucky LP-Gas Association. Annual convention, Kentucky hotel, Louisville.

August 28-30—LPGA District No. 2 (Southwest). Convention and trade show, Sheraton-Palace hotel, San Francisco.

OCTOBER

Oct. 12-14—Gas Appliance Manufacturers Association. Annual meeting, El Mirador hotel, Palm Springs, Calif.

Oct. 17-19 — American Gas Association - Pacific Coast Gas Association. Combined annual convention, Ambassador hotel, Los Angeles.

Oct. 18-22—National Safety Council. Forty-third national safety congress and exposition, Chicago.

All associations are invited to send in dates of their forthcoming meetings for this calendar.



"You can't beat this Sinclair hand"

The deck is definitely stacked in your favor when you deal with Sinclair. Every tank-load of SINCLAIR LP-Gas puts you out front with the five famous Sinclair extras – INTEGRITY, REPUTATION, QUALITY, PERFORMANCE and GOOD SERVICE. You get the kind of a hand that adds up to more satisfied repeat customers – and a faster-growing, more profitable business for you.

Find out about this top quality LP-Gas with high heating value – with moisture and impurities removed... then, switch to Sinclair, soon.

SINCLAIR a great name in oil



SINCLAIR OIL & GAS COMPANY

Liquified Petroleum Gas Sales Department • Sinclair Oil Building, Tulsa, Okla.

The Trade

News of personnel of manufacturers, contractors, and suppliers to the LPG industry.

Parker, York, Denno Promoted At Steel Cooperage Division

Steel Cooperage division of the Serrick Corp., announces the following personnel changes:

James P. Parker has been named sales manager. Mr. Parker has had wide experience in the L.P. gas equipment business, during which time he was associated with the A. O. Smith Corp. and Scaife Co.

Edward M. York has been appointed to the sales force to assist Mr. Parker in Indiana, Michigan and Ohio. Mr. York has had 12 years experience in the L.P. gas industry. Before joining Steel Cooperage Mr. York was affiliated with the Michigan Bottled Gas Co., of Durand.

Sam Denno, formerly sales manager, is to enter the equipment supply field with exclusive sales rights for Steel Cooperage products in the mobile homes industry.

Coombe, Forker Advance At William Powell Co.

H. James Coombe, president of the William Powell Co., has been elected chairman of the board of the company. Mr. Coombe, who has served as president since 1941, has been with the company for 45 years.

David M. Forker Jr., executive vice president for the past two years, has been elected president of Powell. Mr. Forker has been with the company since 1926.



H. James Coombe



David M. Forker Jr.

United Petroleum Gas Co. Announces Nine Promotions

United Petroleum Gas Co. announces the following promotions, changes and new appointments in personnel:

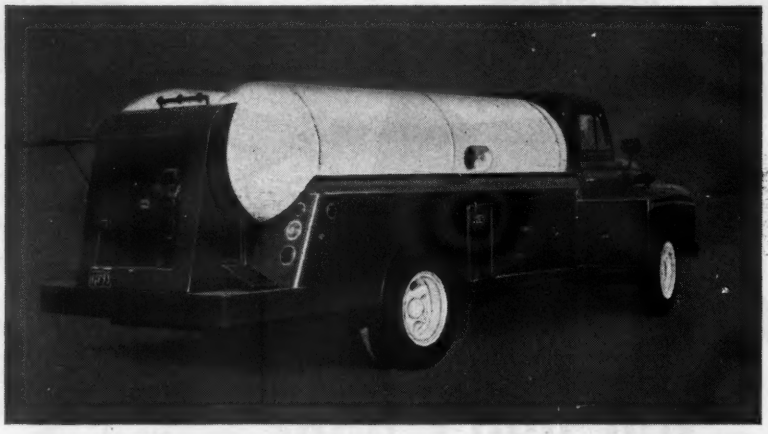
D. A. Larson, former territorial representative for the company in Missouri and Illinois, has been promoted to special duties in the main office of the company, and will have his operational headquarters in Minneapolis.

W. A. Stange will represent United in southern Michigan, western Ohio, Illinois, and Indiana.

R. J. Bell will represent United in Wisconsin and northern Illinois.

R. E. Bolkcom will be assigned to North and South Dakota and western Minnesota.

R. J. Anderson will assist C. H. Koch in sales work in west Texas, to accommodate United's expanded operations in that area.



New Downingtown LP-Gas Tank Trucks Save Time, Trouble, Tempers

Designed to speed up delivery and build up your profits, these new Downingtown tank trucks offer many custom-quality features at a production price. Check these Downingtown values:

1. Twin-barrel design lowers center of gravity—increases stability.
2. Meet all regulations—designed and tested to meet both ICC MC-330 specifications and ASME Code for 250 pounds' pressure.
3. Standard units include full skirting, all cabinets, compact plumbing—entire unit easily transferred to a new chassis.
4. Rear delivery cabinet gives bad weather protection—groups all controls at operator's finger tips.
5. Safe, trouble-free wiring fully enclosed—wiring and lights are vapor-, moisture- and corrosion-proof.
6. Truck pump will load truck or evacuate customers' tanks when required.
7. Hose leads directly out either side of rear cabinets.
8. Internal safety valve eliminates moisture-collecting recess in top of tanks.
9. Water capacity: 1,700 gallons. Weight, fully equipped, but not including chassis, less than 12,700 pounds.

Bulletin TT gives complete specifications. Write for your copy today.

OTHER CAPACITIES AVAILABLE—INFORMATION UPON REQUEST.

DOWNINGTOWN IRON WORKS INC.

Downingtown Iron Works, Inc.

138 Wallace Ave., Downingtown, Pa.

New York Office: 52 Vanderbilt Ave., Room 2099, New York 17, N.Y.

Sales Offices: 227 Hanna Bldg., Cleveland 15
936 W. Peachtree St., N.W., Room 112, Atlanta 3
208 South LaSalle St., Room 790, Chicago 4
552 Roosevelt Bldg., Los Angeles 17
18 W. 43rd St., Room 13, Kansas City 11, Mo.

Hackney

Division of PRESSED STEEL TANK COMPANY

1487 S. 66th St., Milwaukee 14, Wisconsin • Manufacturer of Hackney Products

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



Want *DEPENDABLE SERVICE?*

Of one thing be certain,
This cute little lass,
Knows DEPENDABLE
SERVICE —
She brought him TEXGAS!

. . . and there's even more truth than poetry in that statement. The *TEXGAS* emblem is fast becoming a hallmark of *DEPENDABILITY* in the LP-Gas Industry.

How has Texas Natural attained this reputation for Service? Quite frankly it's the result of an "extra-special" desire to serve on the part of all Texas Natural people, and the fact that *LP-Gas is not a sideline with Texas Natural.*

Since Texas Natural manufactures the Butane and Propane it sells, you, as a *TEXGAS customer,* benefit from a adequate supply. Then, to provide fast delivery, Texas Natural owns one of the largest fleets of tank cars in the LP-Gas Industry. Add it up! The combination of these two features is your assurance of *DEPENDABLE SERVICE.*

So — Winter or Summer, Spring or Fall, for the kind of service you want . . . and for the contract you need, call, wire or write Texas Natural.



PROPANE ● BUTANE ● NATURAL GASOLINE —— Phone 3-0123

Floyd Forseth, formerly manager of United's warehouse in New London, Minn., has been transferred to the Minneapolis office. He will be in charge of the sales order department.

Douglas M. Gauger, formerly in charge of scheduling operations in United's traffic department, Minneapolis, has been transferred to New London, Minn., where he assumed charge of the parts and equipment warehouse.

Wayne L. DeTuncq, formerly with Solar Aircraft Co. in engineering work, has joined United as chief engineer. He will headquarter in the Minneapolis office.

Brinker, Wolkenheim, Shepherd Promoted At A. O. Smith Corp.



J. H. Brinker

Three changes affecting top management personnel of the A. O. Smith Corp.'s Permaglas division at Kankakee, Ill., have been announced by F. S. Cornell, vice president and general manager of the Milwaukee corporation.

J. H. Brinker, who has been corporation director of marketing for the past several years, moves to Kankakee to become general manager of the Permaglas division.

S. E. Wolkenheim leaves the position of Permaglas general sales manager to succeed Mr. Brinker in Milwaukee as director of marketing. R. J. Shepherd, who has been manager of water heater sales for the division, fills the post of general sales manager vacated by Mr. Wolkenheim.



S. E. Wolkenheim



R. J. Shepherd

G. P. Hough, who has been acting division manager in addition to his regular duties as regional manager for the corporation's North Central district, with offices at Chicago, reverts to his former single activity.

Jenkisson Appointed Roper Appliance Sales Manager

J. Arthur Jenkisson has been appointed sales manager of the Geo. D. Roper special appliance division. He will be responsible primarily for the promotion of Roper's "arRangeable" built-in gas cooking units.

Mr. Jenkisson resigned after six years as sales promotion and advertising manager of Dri-Gas Co., Chicago, division of Warren Petroleum Corp., to take the new position with Roper. His appointment was announced by N. C. Kreuter, general sales manager.

Phillips' Stockholders Re-Elect Directors and Company Officials

Stockholders of Phillips Petroleum Co. re-elected to serve as directors for the coming year K. S. Adams, H. M. Addinsell, F. W. Begrisch, Paul Endacott, Rayburn L. Foster, T. S. Gay, J. L. Johnston, W. W. Keeler, Stanley Learned, Paul J. Parker, C. R. Musgrave, Philip R. Phillips, W. C. Smoot, B. F. Stradley, and R. W. Thomas.

The board of directors re-elected all officers, including K. S. Adams, chairman of the board and chief executive officer; Paul Endacott, president; Stanley Learned, chairman of the executive committee and assist-

QUESTION:

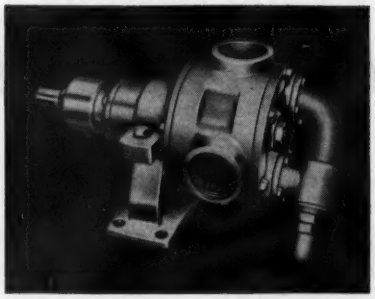
What's easier than



ANSWER:

Installing a Fairbanks-Morse LP-Gas Pump, of course! Its unique mounting bracket is designed to save time, battered knuckles and frayed tempers. By loosening just two bolts, the entire body of the pump can be rotated to bring the ports in alignment for any piping arrangement. And there's enough lateral movement to facilitate easy drive connection.

Though it takes only minutes to install, an F-M Pump is built to stay there for years... its multiple mechanical seals protect you from the most common cause of pump failure—leakage at the power end.



Models for pumping LP-gas or anhydrous ammonia from trucks or tank cars, as well as stationary models for in-plant use. Capacities to 55 g.p.m. Write Fairbanks, Morse & Co., Pump Sales Div., 3601 Kansas Ave., Kansas City, Kansas.

FAIRBANKS-MORSE

a name worth remembering when you want the best

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

EMPIRE

MAKES THE BEST *Gas* HEATING APPLIANCES IN THE WORLD



NO BASEMENT NEEDED!

There's **NO DOUBT** *about it!*

Automatic – Low Cost

MOST EFFICIENT *Gas* BURNER **MINIMUM FIELD SERVICE** **DEALERS ACCEPTANCE**

USER SATISFACTION **SILENT IN OPERATION**

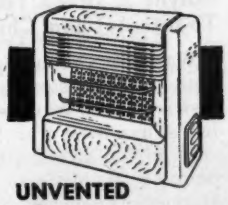
EMPIRE

GAS FLOOR FURNACES

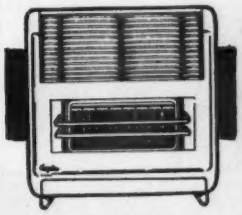
The most essential item in your home for the comfort and protection of your family is the heating plant! The cost of installing a New Empire Gas Floor Furnace is surprisingly little . . . the warmth and convenience you'll enjoy must be experienced to be believed!

If you plan to build a new home or improve your heating plant, your Authorized Empire Dealer has experienced engineers to help you without charge.

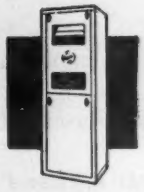




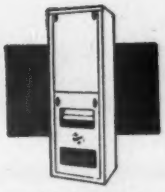
UNVENTED *Gas* HEATER



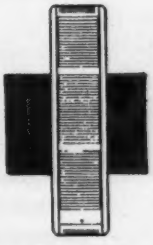
Gas CIRCULATOR HEATER



WINTER AIR CONDITIONER



COUNTER FLOW AIR CONDITIONER



ZONE CONTROL RECESSED HEATER

EMPIRE

A Great Name in Gas Appliances

STOVE COMPANY

BELLEVILLE, ILLINOIS

ant to the president; W. W. Keeler, vice president; Rayburn L. Foster, vice president and general counsel; B. F. Stradley, vice president and treasurer; C. R. Musgrave, vice president supply and transportation; R. W. Thomas, vice president research and development; T. S. Gay, vice president and assistant secretary; Paul J. Parker, secretary and assistant treasurer; G. W. McCullough, vice president and chairman of the operating committee; C. O. Stark, vice president land and geology; K. E. Beall, vice president economics; R. C. Jopling, vice president; R. E. Parr, comptroller; Harry D. Turner, general attorney; J. A. Thompson, secretary of the executive committee; W. F. Martin, assistant secretary and assistant treasurer; T. V. Stevens, assistant treasurer; J. F. Kinslow, assistant secretary; R. E. Arnold, assistant secretary; S. G. Wray, assistant secretary; B. E. Witchell, assistant comptroller; W. A. Hensley, assistant comptroller, and H. W. Hinkle, assistant comptroller. S. L. Lugar was elected an assistant comptroller for the first time.

Carter

Butane

Propane

it's natural to link
LPG with Carter

In the LPG industry, CARTER and unexcelled products are naturally associated. And there's a simple reason for it: CARTER'S LPG products *are* unexcelled . . . the result of more than twenty years' experience in the manufacture of highest quality butane and propane. This experience — gained by men interested in only the best — is yours when you buy LPG from CARTER.

THE CARTER OIL COMPANY
TULSA, OKLAHOMA

Herron, Spitzel Named Managers Of Air Conditioning Division

Richard L. Herron has been appointed as West Central district manager for the Air Conditioner division, American Radiator & Standard Sanitary Corp., it is announced by H. E. Rossell Jr., sales manager. Mr. Herron will make his headquarters in Chicago. The sales territories under his supervision are Chicago, Kansas City, Minnesota, Omaha, St. Louis and Wisconsin-Illinois.

In 1952 Mr. Herron joined American Standard as a warm air specialist in Kansas City. In June, 1953, he became district representative in Kansas City territory for the then



R. L. Herron



J. F. Spitzel

Sunbeam Air Conditioner division.

J. F. Spitzel has been appointed East Central district manager for the Air Conditioner division. The sales territories under his supervision will be Boston, Buffalo, Cleveland, Detroit, Ohio, Pittsburgh, and Tri-State area.

Mr. Spitzel joined W. A. Case & Son Mfg. Co., Buffalo, in 1943 as a salesman, later becoming assistant branch manager and finally heating sales manager of all branches of the company before joining American-Standard.

Wayne E. Green Transferred To International Chicago Office

Wayne E. Greene, formerly International Harvester Co. motor truck district sales manager in New Orleans, has been transferred to Chicago in the same capacity. He replaces F. M. McCarty who has been Harvester's Chicago motor truck district manager for the past 23 years. In anticipation of his retirement, Mr. McCarty will serve as supervisor of national and fleet sales in the Chicago area.

Mr. Greene, a 21-year Harvester sales veteran, began his company career as a salesman at the Sweetwater, Texas, district office. He served there both as a farm equipment and motor truck salesman. In 1937 he was made manager of Har-

BREAKING ALL PREVIOUS RECORDS!

57% GAIN OVER LAST YEAR

Quaker

20-YEAR
"assured comfort"
GAS HEATERS



New **BUT ALREADY THE NATION'S HOTTEST LINE!**

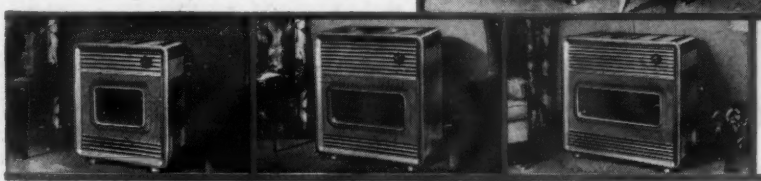
- ✔ **NEW** modern "Air-Stream" Design!
- ✔ **NEW** double porcelained combustion chamber . . . guaranteed 20 years!
- ✔ **NEW** "Multi-Heat" cast iron burner . . . proved the finest on all gases, *including LP!*
- ✔ **NEW** automatic twin floor-level blower!
- ✔ **NEW** 4-way heat extractor!
- ✔ **NEW**—every model equipped with 100% safety shut-off!

COMING SOON
New
GAS WALL HEATERS

3 RADIANT "FIREPLACE" *VENTED MODELS*

The nation's finest vented radiant circulators. Three capacities . . . 35,000, 50,000, 65,000.





3 "BLUE FLAME" *VENTED CIRCULATORS*

By any comparison, the finest straight circulators made. In three capacities . . . 35,000, 50,000, 65,000.

Learn Why More Dealers are Switching to Quaker than to any other brand! Learn Why Quaker Dealers Make More Money!

Quaker MANUFACTURING COMPANY
Heating Division of Florence Stove Company
General Offices—1147 Merchandise Mart, Chicago 54, Ill.

UNVENTED HEATERS? *Quaker has America's hottest selling line. New! Sensational!*

vester's motor truck retail branch at El Paso, and two years later was appointed assistant motor truck district manager at Tulsa. He later served in the same capacity at Houston and Dallas.

Hull Appointed Day & Night Construction Sales Manager

The appointment of Louis M. Hull as manager of new construction sales for the Day & Night division of Carrier Corp. has been announced by the firm's general manager, William J. Bailey Jr.

Mr. Hull, a familiar figure in the gas industry, began his career with the Southern California Gas Co. in 1932 where he served with the Los Angeles office and in San Joaquin valley offices.

Other Day & Night recent selections include the appointment of Craig C. Stirewalt as northern California sales manager. Mr. Stirewalt came to Day & Night in 1945 and until this recent promotion has been serving as sales representative in the San Diego and Santa Ana areas of southern California.

Richard Whitney has been named product manager for water and space heating equipment. He brings some five years of direct experience in the industry to his new position.

Schweitzer New Representative In Janitrol Pittsburgh Area

The appointment of William A. Schweitzer as Janitrol sales and service representative in the Pittsburgh territory has been announced by Walter Shoemaker, district manager. Mr. Schweitzer will represent the Janitrol line of residential, industrial, and commercial heating and air conditioning equipment.

Before joining the Janitrol organization, Mr. Schweitzer was associated for 15 years with the appliance department of the Equitable Gas Co.

Belanger Named Sales Assistant At Detroit-Michigan Stove Co.

Appointment of Jack A. Belanger as assistant sales manager for the commercial sales division of the Detroit-Michigan Stove Co. has been announced by Fred A. Kaiser, president.

Mr. Belanger joined the Detroit-Michigan Stove Co. in 1947, working in the order department. In 1948 he became supervisor of the department and in 1949 he was assigned to the sales department. In 1954 he was named sales representative for New York state.

Crimmins Named Manager of Magic Chef Sales Division

James A. Crimmins, for 28 years a member of the sales department of Magic Chef Inc., has been named manager of the company's northern sales division with headquarters in the Merchandise Mart in Chicago, according to Kenneth O. Dupree, Magic Chef's general sales manager.

The northern division of Magic Chef includes Minnesota, Wisconsin, Iowa, Michigan, Chicago, and other northern parts of Illinois and Indiana.

President Ingersoll Becomes Borg-Warner Board Chairman

Roy C. Ingersoll, president of Borg-Warner, has assumed the title of president and chairman of the board following action by the directors of the corporation. The post of chairman has been vacant since the death of C. S. Davis.

Prior to Mr. Ingersoll's election to the presidency in 1950 he was vice president of Borg-Warner and president of the corporation's Ingersoll divisions.



Dearborn Cool Safety Cabinet gas area heaters—No. 1, year after year in dollar volume of gas space heater sales—No. 1 in units sold for use with L-P gas. And year after year, your No. 1 profit-maker.

DEARBORN STOVE COMPANY
1700 W. Commerce St.
Dallas, Texas

you can depend on Dearborn®

Remington Rand

BETTER BUSINESS METHODS

For Greater Profits Through Lower Costs



Sectional Customer Service Counter Ideal for L. P. Gas Companies

This counter offers custom-made beauty and efficiency without custom-made limitations, and at a mass-production price. In the small office, it's economical to combine cashiering and bookkeeping functions. One Sectional Counter Unit accommodates all facilities and records for these operations. In larger offices, two or more units may be joined, providing the required number of work stations while maintaining the custom-made appearance.

The counter promotes pleasant, rapid, face-to-face service to customers ...offers them ideal counter height for making out checks, applications or other necessary forms, and a convenient, continuous parcel shelf. The working side is compact without being crowded, with all facilities within arm's reach.

Certified insulated units installed in the counter provide 24 hour "Point-of-Use" protection against fire for valuable operating records. The counter eliminates the usual "standing" counter-cashiering, resultant fatigue and errors. For further details on this extremely functional unit, read folder SC764, offered in the coupon.

"Ledgerless" Bookkeeping Cuts Accounts Receivable 33⅓% in First Year for Growing L. P. Distributor

Typical of results gained with the Simplified Unit Invoice Accounting Plan (SUIAP, for short) are those reported recently by a growing, eastern L. P. Gas Distributor.

This firm's management finds that, in just one year's time, SUIAP has cut transcription errors greatly...yielded labor savings of more than 50%...improved collections and reduced accounts receivable by 33⅓%...and provided accurate daily reports on accounts receivable which give the situation at a glance.

Other benefits, inherent in SUIAP, are fully outlined in Booklet KD554. For more information on this last word in visible, ledgerless bookkeeping systems, circle KD554 on the coupon.



Butane Supplier Stops Month-end Rush, Overtime, with Cycle Billing

If your customers are getting their statements later due to an expanding business, consider this: A butane supplier, steadily growing, was servicing almost 8,000 accounts...and falling further and further behind in billing and collections, despite adding help and equipment! He needed a solution, not a stop-gap. We suggested Cycle Billing. He tried it. Now, he's rid of month-end rush, late statements, overtime and daily postings for good—at less expense per year! And his accounts receivable are protected against fire at "Point-of-Use" 24 hours a day. For more interesting facts on this case, circle KD763.

L. P. Gas Companies Net Faster Customer Service, Lower Operating Costs

A system which results in faster handling of customer requests, improved customer-employee relations and lower operating costs, both in the office and in the field, is described, step by step, in folder X1306. This system has been painstakingly developed...proved in use over a period of years in cooperation with more than 300 Public Utility and L. P. Gas Companies. All procedures discussed in this ten page folder have stood the test of time under the most severe operating conditions. For your free, information-packed copy of "A Proved System for L. P. Gas Companies", circle X1306 on the coupon.

Remington Rand

Room 1674, 315 Fourth Ave., New York 10

Yes, I'd like to have the literature circled.

SC764 KD554 KD763 X1306

Name_____

Title_____

Firm_____

Address_____

City_____ Zone____ State_____

LP-1A

Profit-Building **IDEAS** For Business

Mr. Ingersoll and E. S. Dulin, president of Byron Jackson Co., announce that they will recommend to their respective boards of directors that the two companies merge.

Borg-Warner is a manufacturer of automotive, aircraft and agricultural implement parts and household appliances. Byron Jackson is a manufacturer of centrifugal pumps, oil field tools, and services.

Wolverine Tube Appoints Whitlock Sales Representative

C. P. Whitlock has been appointed sales representative in Philadelphia, G. H. Tobelman, Eastern district sales manager for Wolverine Tube, announced recently. He will be replacing John van Wagoner.

Mr. Whitlock will headquarter in Wolverine's Philadelphia office. He may be reached at the Liberty Trust Bldg.

R. C. Cash, sales representative for Wolverine Tube in Tennessee, Mississippi, Alabama and eastern Arkansas, has moved his headquarters from Memphis to Birmingham, Ala., according to Carl T. Fuller, Southwestern district sales manager for Wolverine Tube, division of Calumet & Hecla Inc.

The new Birmingham office will locate Mr. Cash closer to the geographical center of his territory and offer Wolverine customers better service. Mr. Cash may now be reached through Wolverine's Decatur, Ala., plant.

Trade Notes

Nelson E. Davenport, sales engineer in *Rockwell Manufacturing Co.'s* Meter and Valve division district office at Atlanta for the past five years, has been named assistant gas products manager with headquarters in Pittsburgh.

Perfection Industries Inc. has employed *A. A. Johnson* as its furnace sales division representative in Minnesota and North Dakota. He replace *Harry Erikson,* who has been promoted to furnace sales engineer for the entire western division. Headquarters for Mr. Johnson will be in Minneapolis.

C. S. Hansen was appointed sales manager of the wholesale marketing division of the *Pure Oil Co.,* with offices at the firm's general office, Chicago.

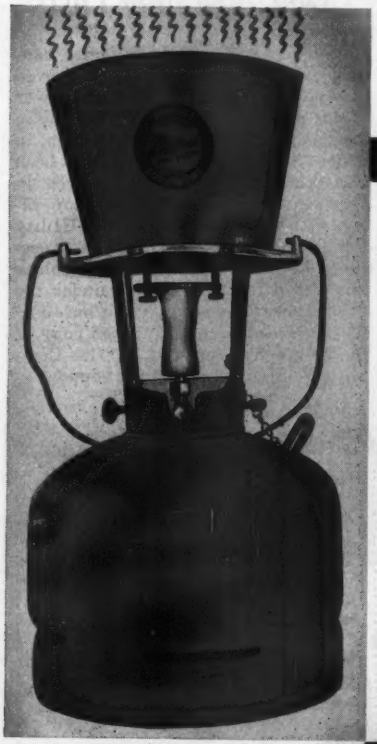
Odell Glass has been named by *Ruud Manufacturing Co.* as its sales representative for the state of Georgia. Mr. Glass will call on gas utilities, L.P. gas distributors, and heating men throughout the state in behalf of the Kalamazoo, Mich., manufacturer.

Richard F. Blankenship, who came to *Magic Chef Inc.* early in 1955 as director of materials control, has been promoted to the position of plant manager of the St. Louis division, it has been announced by Cecil M. Dunn, president. Mr. Blankenship has had 10 years' experience in every phase of range and heater manufacturing.

Sidney C. Reese

Sidney C. Reese, a 39-year veteran with Perfection Industries Inc., passed away in St. Luke's hospital, Cleveland, following a short illness.

In December, 1916, Mr. Reese came to Perfection Stove Co. as a rate clerk in the traffic department. In 1933 he transferred to the furnace sales division and, at the time of his death, was assistant to the sales manager of that division.



NO. 2 FURNACE
PORTABLE HEATER
SPIDER BURNER

Here's Why More Plumbers are Going to LP-GAS and Mutual

FURNACES AND TORCHES

LP-Gas is the MODERN fuel. It is FASTER, CLEANER, SAFER and CHEAPER THAN GASOLINE. Light a match and POOF – you're in business. Mutual's field-proven LP-Gas Furnace melts 60 pounds of lead in 12 minutes (Try and beat that). You get the job done better and quicker with fewer man hours. No pumping, priming or waiting. Won't blow out. No smoke. Light weight. Ideal for heavy duty preheating or close melting. Torches available in broad flame or pointed flame.

INTERCHANGEABLE CYLINDER

Only MUTUAL offers you the opportunity to use one LP-Gas tank for all purposes—you can attach the plumbers furnace . . . a heater . . . a spider top . . . or a hose for operating the soldering iron . . . or one of a dozen different MUTUAL torches and other devices. Get our complete catalog today or contact your nearest plumbing supply house. Low prices, prompt shipment and guaranteed equipment are yours.

ONE TANK DOES ALL JOBS

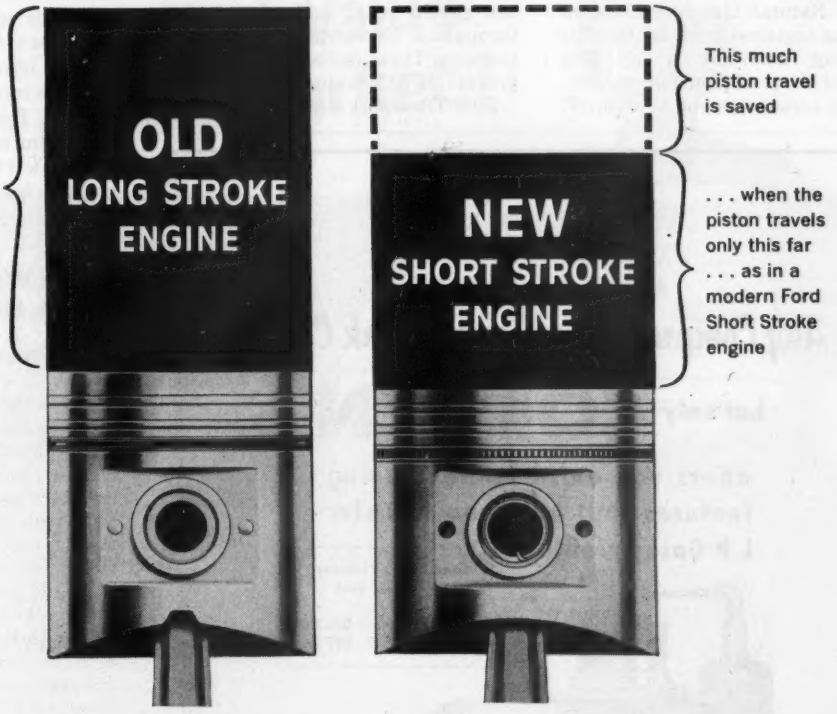


SPIDER BURNER
PORTABLE HEATER
No. 4 POINTED FLAME TORCH
No. 5 BLOW TORCH
LP-Gas SOLDERING SYSTEM
No. 2 FURNACE

Mutual LIQUID GAS EQUIPMENT CO., Inc.
13129 SOUTH BROADWAY, GARDENA, CALIFORNIA

Look under the hood!

Something **NEW** is happening to truck engine design . . .



The big news in truck engines is modern *short-stroke design.* Piston rings last up to 53% longer. Engine friction is cut as much as 33%. You save up to 1 gallon of gas in 7. Only Ford has Short Stroke design in *every* engine—V-8 or Six—in *every* truck.



New heavy-duty rear axle and other new components give the Ford F-600 "2-tonner" up to 18,000 lbs. GVW! Now more than ever, Ford is the money-making leader of the 2-ton field with top payload capacity and gas-saving Short Stroke power . . . from the 140-h.p. *Power King* V-8. Choice of 3 Synchro-Silent type transmissions, single- or 2-speed rear axles.

Differences between outdated long-stroke engines and Ford's modern Short Stroke design may seem small, but actually they're *not.*

In one case, for instance, Ford's stroke is shorter by 1⅜ inches. A small matter? This shorter stroke means 4,940 miles *less piston travel per year*—per piston—in an average year's driving of 26,000 miles.

Less piston travel means less friction . . . less wear. And that means lower upkeep costs, longer engine life, greater gas savings and more usable power.

Be sure your next truck has a modern short-stroke engine that will not be outdated at trade-in time. You *will* be sure if it's a FORD Truck. Because Ford *and Ford alone* gives you a Short Stroke engine in every model.

Ford Triple Economy Trucks

THE MONEY MAKERS FOR '55

NEWS

News and news notes about the activities of manufacturers, distributors and dealers.

Texas Natural Gas Buys Ellis Transport Interest

Texas Natural Gasoline Corp. of Tulsa has acquired from W. G. Ellis controlling interest in the Ellis Transport Corp. of Houston, according to an announcement by John T. Oxley, president of Texas Natural.

Ellis Transport is a large wholesale distributor of liquefied petroleum gas to retail dealers operating throughout 70 counties in the Houston area. These dealers serve an aggregate of 34,000 customers.

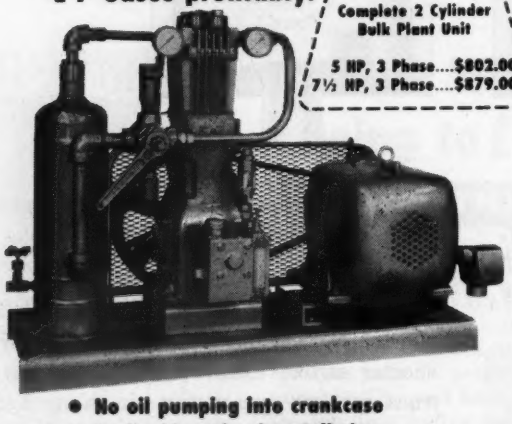
Ellis Transport also has 20 million gal. of underground LPG storage in the Pierce Junction salt dome, just southeast of the city limits of Houston. This underground storage, together with a large underground storage terminal which Texas Natural has recently developed at Mont Belvieu, Texas, and its underground storage in west Texas, brings Texas Natural's 1955 total underground storage facilities to approximately 75 million gal.

Any Compressor will empty Tank Cars!

but only CORKEN

offers you extra money saving features that help you transfer L P Gases profitably.

Complete 2 Cylinder Bulk Plant Unit
5 HP, 3 Phase....$802.00
7½ HP, 3 Phase....$879.00



- No oil pumping into crankcase
- No liquid getting into cylinders
- Automatic cylinder lubrication
- Positive shut-off liquid trap
- Right size for truck mounting as well as portable and bulk plant installations.

Distributors In Principal Cities

CORKEN'S INCORPORATED
206 E. GRAND • OKLA. CITY
Eastern Office
935 Madison Ave. • Plainfield, N. J.

Henry Wade Receives NGAA Hanlon Award



Henry N. Wade

The Hanlon award, highest honor in the natural gasoline industry and one of the ranking awards in the petroleum industry, was conferred on Henry N. Wade, process consultant, Stearns-Roger Manufacturing Co., Denver, at the annual convention of the Natural Gasoline Association of America.

Henry Wade is the nineteenth recipient of the Handlon award, which is conferred each year by the NGAA for outstanding service to the natural gasoline industry. Donor of the award is E. I. Hanlon, chairman of the board, National Bank of Tulsa, and a pioneer in the natural gasoline business.

Presentation was made by former NGAA president, J. H. Dunn, president, the Shamrock Oil & Gas Corp., Amarillo. The citation read in part: "With this award today we are officially recognizing the major role played by this man in the technical advances of our industry. We are honoring an engineer who pioneered with original thinking and ideas in the design of natural gas processing plants. His ideas and the resulting plants have given the industry an increased yield of products by more economical means while at the same time improving the ultimate recovery of products from the reservoirs where they originate."

Mr. Wade was involved in various engineering ventures before 1932,

ROPER

"America's Finest Gas Range"



Biggest Value in the Market!



USE THIS TOP-OF-RANGE STORY TO BUILD PROFITABLE SALES





Qualified retailers are invited to write for full information on valuable Roper franchise.

Company Name.....

Individual's Name.....

Title.....

Street Address.....State.....

City.....BP655

PROFIT BUILDERS FOR YOU

- Roper Automatic Gas Ranges
- Roper "arRANGEable" Built-in Gas Cooking Units
- Roper "Dry-Aire" Gas Clothes Dryers

when he formed his own engineering firm, Parkhill-Wade Inc. at Long Beach, Calif. As president and chief engineer of the firm, he designed a number of natural gasoline plants for West Coast producers and in 1932 built the first large-scale gas dehydration plant in the country for the Montana Power & Light Co. This was the forerunner of many similar plants.

Mr. Wade is most widely known for his designing and building, in 1939, of the first high-pressure gas cycling plant for processing the two-phase gas streams from deep distillate wells along the Gulf Coast.



Officers and stockholders of the newly-formed Pioneer Products Inc. in Tulsa include, back row, left to right: Armel Richardson, Marshall Carpenter, C. O. Whisnand, B. C. Truitt, Charles Monroe. Front row, left to right: Glenn Reynolds, Glenn H. Moore, Francis Borelli.

Pioneer Products to Work For Sound LPG Economy

Formation of Pioneer Products Inc., a purchasing and distributing operation, has been announced by Glenn Reynolds, general manager and director, who has been associated for the past seven years with Gas Equipment Co. of Dallas.

With headquarters in Tulsa, the new corporation will organize and expedite supply purchases and distribution at the wholesale and manufacturing level. It's primary object will be to stabilize and standardize products, services and supply distribution as well as sales efforts and sales promotion.

Operations of the new corporation will have no effect on the local identity or the retail level of participating dealers, who will continue to operate individually and separately. It will represent a concerted effort by participants to bring about a sound economy in the L.P. gas industry in Oklahoma, based on uniform sales and service practices to result in a profitable year-round enterprise.

Officers and directors, all stockholders in the new purchasing and distributing corporation, are Francis Borelli, secretary-treasurer, Okarche; Marshall Carpenter, Lindsay; A. J. Loar, Frederick; Charles Monroe, Perry; Glenn H. Moore, vice president, Geary; Armel Richardson, Nowata; Troy Stone, Durant; B. C. Truitt, president, Carnegie, and C. O. Whisnand, Lawton.

NON-LEAK OPERATION

NO LUBRICATION REQUIRED

Get these 2 features in VIKING LP-Gas Pumps

200 SERIES



FIG. 200 VIKING LP-GAS PUMP

ALL Viking 200-series LP-Gas pumps are furnished with Roto-Ring Mechanical Seals, Leak-Proof O-Ring Gaskets and Non-Lubricated Bearings as standard equipment. Viking's Roto-Ring mechanical seal is a simple, self-adjusting, non-leak method of shaft sealing.

O-Ring gaskets are used between all assembled faces on the back flange, head and valve as a further precaution against leakage, since they provide a positive seal.

Pumps are equipped with carbon graphite bearings on both idler and bracket, requiring no outside lubrication. An integral thrust bearing for retaining close end fit and simple adjustment for wear is a lubricated-for-life bearing.

For complete information send for your catalog section HB today.

See our Catalog in the LPG CATALOG

VIKING PUMP COMPANY

CEDAR FALLS, IOWA

Greybull, Lander Branches Have Accident-Free Record

Pure Gas Service Co., Worland, Wyo., has announced that the Greybull and Lander branches completed 1954 with a 100% accident-free record.

There were no accidents during the year involving Workmen's Compensation claims or lost time by any employe, and no accidents involving the trucks and cars operated by the branches.

Talmage Lovelady, president of Pure Gas, states that this record was achieved the first year of a new safety program, which was inaugurated by the company Jan. 1, 1954.

Brook Gas Appoints Hurley Sales Manager

Joe Hurley has been appointed sales manager of the Brook Gas Co. of Miami, Flo., according to Robert Bacon, general manager.

Mr. Hurley was for 23 years sales manager for Southeasten Natural Gas Co., Miami. He came from Syracuse, N. Y., in 1930 and worked one year for the Florida Power & Light Co. before entering the bottled gas field with Southeastern.

Suburban UDI Dealers Hold Anniversary Meet

Suburban UDI Co. dealers in New England met recently for a two-day 25th anniversary convention at the Eastland hotel in Portland, Maine.

A novel "Pilot Out" contest was held for all dealers and their personnel to determine how long the company's new economy pilots would operate on a 5-lb cylinder of LPG.

Speakers at the meeting included Mark Anton, president of Suburban



A highlight of the Suburban-UDI Co. dealer convention in Portland, Maine, was this huge cake baked in the shape of a utility gas installation. Attacking this tasty symbol of their trade are William F. Holmes, left, division manager of UDI, and George Kelley, assistant manager.

Get these hands out of his pockets!



Weeds literally have their "hands in the pocket" of every farmer . . . reducing his income by wasting valuable irrigation water, restricting yields, increasing cultivation costs, harboring damaging insects and robbing the soil of necessary minerals and plant foods.

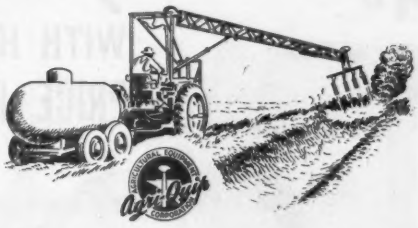
By reducing your customer's income, they limit his purchasing power and get their hands into your pocket too, Mr. LP-Gas Dealer.

Agri-Quip's complete line of LP-Gas Weed Burners, priced and sized to fit every need, are the answer to economical and effective weed control . . . the means of removing weed's hands from the farmer's pocket . . . and yours!

Write, today, for your catalog of the Agri-Quip line.

Model 80, the "Goliath" of the A-Q line. A 4-burner unit for tractor mounting capable of clearing 2-4 miles per hour of dense weed growth.

Prospects, ditch companies, large farm operators, Highway Departments and custom operators.





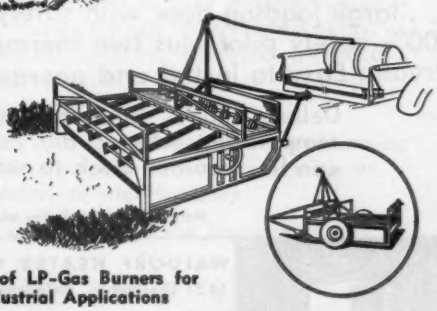
Model 20-25-H, the "Mighty Midget". A hand-type, single burner unit. Clears ditches, laterals, fence rows, etc. Burns swath 2-6 ft. wide.

Prospects, every farmer, Highway and Street Departments, drive-in theatres, ranchers, utility companies and countless others.



Model 40, an easy mounting 2-burner unit that can clear 2-4 miles per hour of ditch or lateral. Also available with 3 burners, the Model 60.

Prospects, every farmer owning an average size farm.



Model 2-S, a mobile Field Flamer for burning alfalfa fields, pastures and perennial crop lands. Burns swath 8 ft. wide at 3-8 miles per hour.

Prospects, hay and seed producers.

Pioneer Manufacturers of LP-Gas Burners for Agricultural and Industrial Applications

Agricultural Equipment Corporation

Box 200-C La Junta, Colorado

Propane Gas Corp., Whippany, N. J., and William H. Gove, vice president of sales for EMC Recordings Corp.

Appliance displays accompanied the convention. Manufacturers' representatives brought the latest information concerning their particular appliances.

Entertainment included a dinner at the Eastland ballroom the first evening of the meeting, with Dr. Henry Gerald, noted psychologist, entertaining the group. A friendship hour, banquet and evening of dancing climaxed the final day of the convention.



Smiling a greeting for UDI dealers from all over New England, girls at the registration desk, all from UDI offices in Portland, are, left to right, Dorothy Gallupe, Ruth DeRoche, and Kay McDonough. Door prizes at the gathering included two ranges and a dryer.

At last! LOW-PRICED Gas DRYERS WITH HIGH PRICE FEATURES



MODEL WG-1-D DELUXE

MODEL WG-1 STANDARD

Both standard and deluxe models are completely automatic . . . for all gases . . . have 16 to 20 lb wet weight capacity . . . "Stay Cool" enamel cabinets . . . most accessible lint traps . . . large loading door with safety switch . . . 100% safety pilot plus two thermostats in air stream. Easy to install and operate.

Deluxe model has "back-splasher" with additional temperature selector dial . . . Chrome trim . . . and can be mounted flush to wall.

Mail This Coupon Today and Get the Whole WALDORF Story!

WALDORF

WALDORF HEATER COMPANY, Dept. 6.
1421 Chestnut St., Philadelphia 2, Pa.

Tell me more about these new gas dryers of yours.

NAME_____

STREET_____

CITY_____ STATE_____

South Dakota LPGA To Hold Service School

A three-day service school will be held at the South Dakota State College June 7-9. Located in Brookings, S. D., the service school is being sponsored by the Vocational Trade & Industrial Department, South Dakota LPGA, and South Dakota State College. The service school is for the benefit of anyone who comes into contact with gas in any of its forms.

Subjects to be covered at the meet include pipe sizing, pressure regulators, controls, pumps and compressors, service, heat loss, sizing, registers, stratification, air circulation, and others.

All those attending the session will receive a complete abstract of all lectures and instruction given, after completion of the course.

Western Liquid Gas Holds LPG Fire Demonstration

George Requa, executive secretary of the Western Liquid Gas Association, recently presented a demonstration on handling L.P. gas fires before the Spring Valley fire department at Woodland, Calif. A request for the demonstration came after an LPG truck turned over and the fire department found that it didn't know what to do, although the truck did not burn.

As a result of this meeting, which was held after the group's last regular series of safety and training meetings, requests have come from other fire districts and departments. In response to these requests three additional meetings have been held for fire departments.

The response to these meetings, which included one with the Ukiah fire department with 35 men in attendance, one with the Sutter Creek fire department with 84 men attending, and one with the Grass Valley department with 115 men in attendance, has been gratifying. Letters have been received by the group from the fire departments as well as members in each of the areas praising the demonstrations and the results achieved.

It was found from the meetings that the firemen as a group had little or no training in combatting an L.P. gas fire or in handling an LPG leak.

Fire departments have always been invited to the association's safety and training meetings, but the turnout has been poor, usually with only the chief of the department attending. Since the men are now requesting them, fire fighting demonstrations will be held with the association's regular meetings.

Western Gas & Power Purchased by Ring

Stuart Ring and two associates have purchased the Western Gas & Power Co., a propane firm located in Wenatchee, Wash. The firm was purchased from Archie Elliott.

Western Gas & Power has been serving the area for 12 years, delivering propane for domestic uses and for engine fuel. The firm also has a repair and maintenance service.

Mr. Ring was formerly local manager for the Wenatchee Gas Co., which is a branch of Northern Liquefied Gas Co. Inc. in Seattle.

Time Draws Near For Management Schools

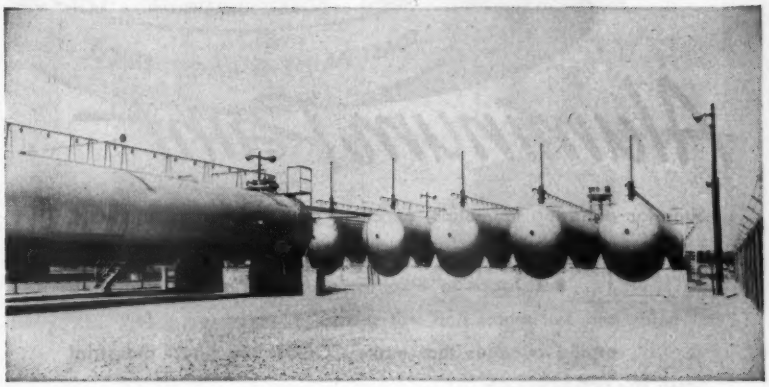
Plans are nearing completion for two management schools to be held during June under the guidance of the West Coast LPGA. June 19-22 are the dates for the District No. 2 school to be held at the University of California, while the Northwest district school will convene June 26-29 at the University of Oregon.

The District No. 2 management school, meeting at Berkeley, Calif., will be limited to 80 students. The fee of $40 per student will include three nights' lodging, nine meals and all other costs. The group will stay at International House.

Subjects to be covered at the school include accounting, sales promotion and advertising, financing, off-peak loads, long-term loans, business and customer forms, personnel, operating costs, safety, credit and collection, sales training, pumping for profits, and many more.



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Instructors will include M. L. Trotter, Columbia, S. C.; Charles Corken, Oklahoma City; J. A. Gilbert, Moores Business Forms, Emeryville; Frank W. Wickhorst, Kaiser Corp.; R. E. Gain, Suburban Gas Service; J. A. Walker, Standard Oil of Calif.; R. W. Dorman, General Petroleum Corp.; Richard M. Oddie, Bank of America; Edward L. Turkington, Small Business Administration; Woody Commins, Calor Gas Co.; John L. Storch, Petrolane Ltd., and others.

Most of the same subjects covered at the Berkeley meet will be on the agenda at the Northwest District meet at Eugene, Ore. This school will be limited to 50 students and the cost will be the same.

Petrolane Gas Profits Hit All-Time High

Net profit for Petrolane Gas Service Inc. for 1954 was $450,778 after taxes, equal to $1.10 per share, P. E. Foote, chairman of the board, announced at the annual meeting of shareholders. The 1954 profits were the highest in the history of the Long Beach company.

The officers and directors elected were P. E. Foote, president and chairman of the board; Leonard Andrews, director and vice president; R. J. Munzer, director and vice president; J. A. Campbell, Edwin W. Taylor, F. S. Wade, Lowell Stanley, directors; E. D. Davies, vice president; Frank M. Taylor, secretary; R. L. Bache, treasurer; and W. G. Ginder, assistant treasurer.

Seven LPG Pipe Lines Scheduled for Completion

According to a survey recently completed by the Committee for Pipe Line Companies, a total of 11,432 miles of crude oil and petroleum product pipe lines are scheduled to be completed in 1955-56. These lines will cost about $589 million.

Among the products pipe lines to be completed are seven LPG lines. The $15 million L.P. gas line planned by Bowen Oil & Management Co. is a 460-mile, 10-in. line from Midland to Texas City, Texas. Deep Rock Gas Co. has a $5 million LPG line scheduled to run 120 miles from Tioga, N. D., to the Canadian border for the U. S. portion of a line to Winnipeg and other Manitoba, Canada, cities.

Other smaller LPG lines include a 215-mile line scheduled by Sunflower Pipe Line Co. from Sublette to Wichita, Kan., to cost an estimated $3,455,000; a 117-mile line costing $2,252,000 scheduled by the Goliad

Corp. from Kittie plant to Corpus Christi, Texas; and a 119-mile line from Bloomington to Gallup, N. M., planned by El Paso Natural Gas Co. and costing $1,333,000. Products Pipe Line Co. plans to complete a 92-mile line from Provident City to Texas City, Texas, at a cost of $1,907,000.

Magnolia Pipe Line Co. is converting an existing 444-mile, 8- and 10-in. crude line from Midland to Beaumont, Texas, to L. P. gas service.

Rapid Thermogas Elects Two Vice Presidents

Rapid Thermogas Co., Des Moines, Iowa, elected two new vice presidents at its annual meeting recently. They are Maurice Maher, manager of the company's Ottumwa plant, and Everett Lunning, Cedar Rapids plant manager.

Harlan Williams, vice president, also was elected treasurer. C. L. Crippen, who has been treasurer, is retiring.

Officers re-elected are Charles Russell, president; Elmer Schmidt, secretary; and Mrs. Emma Albright, assistant secretary.

The company operates 16 liquid petroleum gas plants in Iowa, Illinois, and Wisconsin.

LPG Dealer Named Mayor of Atchison, Kan.

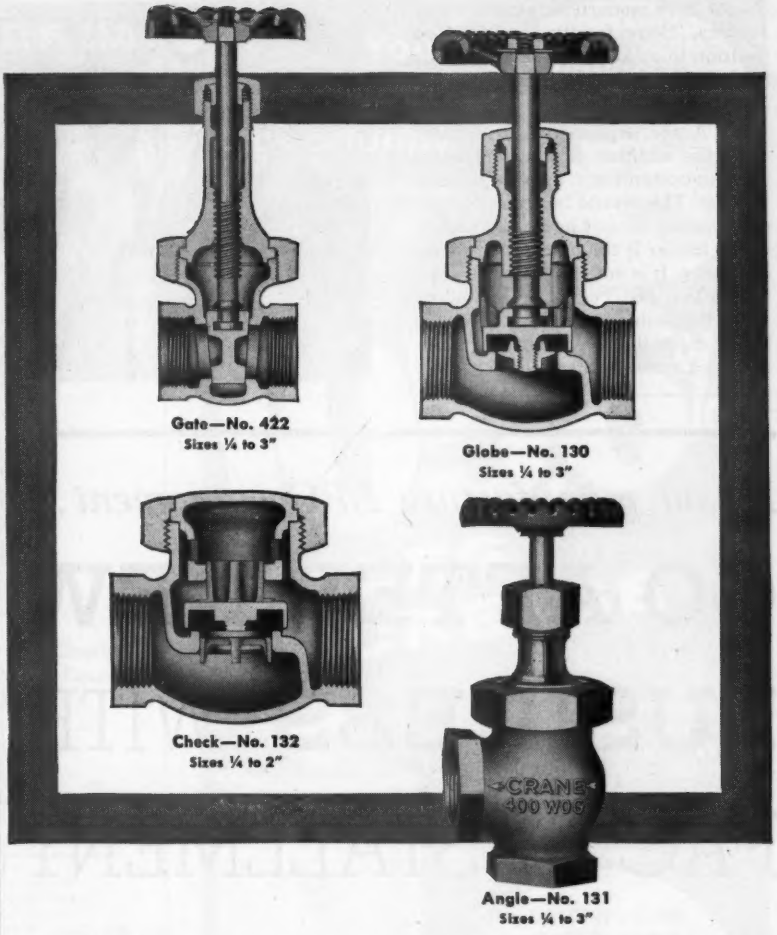
A. C. Ferrell, owner of the A. C. Ferrell Butane Gas Co., Atchison, Kan., has been elected mayor of Atchison by the city commissioners for a four-year term. His election took place in April and is for the ensuing year.

As president of the Atchison Chamber of Commerce and mayor of Atchison, Mr. Ferrell now occupies the two top positions in Atchison's civic affairs. As mayor he also is an ex-officio member of the Atchison city water works board.

Suburban Propane Offers Appliance Rental Plan

A water heater rental plan is now being offered to L.P. gas users along the East Coast by the Suburban Propane Gas Corp. of Whippany, N. J. Its close to one-half million customers are being informed that they may now rent a 30-gal. automatic gas water heater for $1.95 a month.

When asked about this new program, Mark Anton, president, said, "Of course, we are in the gas business. Our interest in appliances is primarily the gas which they consume." Commenting on the potential market, he stated that it is a known fact that a great number of homes



Now in sizes up to 3 in.

Crane Bronze Valves for LP-Gases

New 2½- and 3-inch size gate, globe, and angle valves available immediately—in addition to all smaller sizes from ¼ to 2 inches as formerly. Your local Crane Branch or Crane Wholesaler is ready to fill your order.

Bulk plant operators find these Underwriters' approved Crane quality valves the wisest choice for low ultimate cost. They're more dependable . . . they save on maintenance . . . and last longer. Tank truck builders and LP-Gas piping contractors prefer the name Crane on valves for the added value it means to customers. Talk it over with your Crane Representative.



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do not have modern automatic water heaters. "Some families are not in a position to make the investment," he said, "and others prefer not to do so at this time."

Mr. Anton explained that in many cases the addition of a water heater will put customers in a lower gas rate bracket. This would indicate that the only reason for not having a modern water heater is the investment in the appliance. It is anticipated, therefore, that a low-cost rental plan should make it possible for many more families to enjoy the convenience of plenty of hot water at all times."



Seniors graduating from Southern Technical Institute in gas fuel technology on June 11 include: standing, left to right, Roy D. Pennington, Bradenton, Fla.; Harvey Macklin, Stratford, Ontario; Calvin Appling, Atlanta, Ga.; Charles Luke, Pueblo, Colo.; William Trimble, Calhoun, Ga.; Dean Cramblit, Marengo, Iowa; Donald Law, Emporia, Kans. Seated, left to right, are Herbert Hendricks, Taylorville, Ill.; Richard Oppenheim, Laurelton, N. Y.; Needham Parrish, Savannah, Ga.; David Mathews, Eugene, Ore.; Wiley Cauthen, Montgomery, Ala. Most of these men will be available for jobs in the industry after graduation.

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Pure Gas Service Co. Acquires New Transport

Pure Gas Service Co., with general offices at Worland, Wyo., has taken delivery on a new 8900-gal. L.P. gas transport. This unit was manufactured by the Eaton Metal Products Co. of Denver and has been put into service by Pure Gas in transporting its LPG from the gasoline plants at Worland and Elk Basin, Wyo., to its various bulk plants located at Worland, Greybull, Powell, Riverton, Dubois, and Lander.

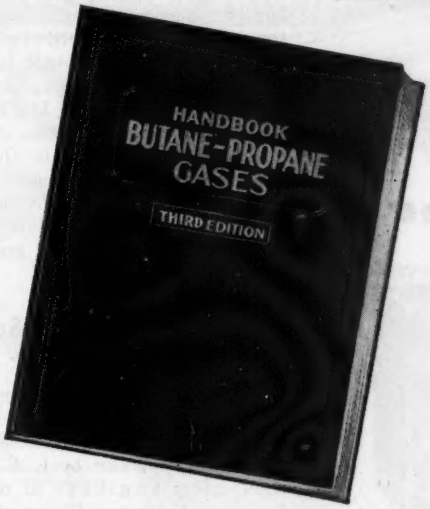
The unit is a semi-trailer of the new lightweight high-tensile steel construction and uses the air spring suspension system. X-ray construction was used, with the tank being fully stress relieved. The unit will haul approximately 8000 gal. of propane and is to be operated principally in the states of Wyoming, Montana, and Idaho.

Sunbeam Air Conditioner Adopts New Name

Sunbeam Air Conditioner division of American Radiator & Standard Sanitary Corp. will be known as the Air Conditioning division of American-Standard.

T. W. McNeill, president of the division, says that the change in name will enable the air conditioning op-

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CONTENTS

PART 1. Introduction
The Progress of the Industry
The ABC of L. P. Gas

PART 2. Physical and Chemical Properties
Properties of the Hydrocarbons in L. P. Gas
Properties of Butane-Propane Mixtures
Volume Correction Factors
Analytical Determination and Testing
Fire Protection and Control

PART 3. Production of L. P. Gas
Natural Gasoline Plants, Recycling Plants, Oil Refineries

PART 4. Transportation and Storage
Delivery by Truck, Rail, Water, and Pipe Line
Storage Tank and Pressure Vessel Design
Liquid Metering and Pumping Systems

PART 5. Distribution of L. P. Gas
Installing and Servicing L. P. Gas Systems
Semi-Bulk Systems
Bottled Gas Systems
Gas Utility Service from Central Plants
Multiple Utility Service from a Central Plant

PART 6. Utilization of L. P. Gas
Comparative Performance With Other Fuels
Appliance Installations and Testing
Domestic Applications
Commercial Applications
Industrial Applications
Enrichment, Peak Load, and Standby Uses
A Fuel for Internal Combustion Engines

PART 7. Regulations
N.B.F.U. Pamphlet No. 58
Motor Carrier Tariff No. 7
Freight Tariff No. 4
Unloading from Railroad Tank Cars
Marine Regulations

PART 8. Appendix
Interchangeability of Other Fuel Gases with Natural Gas
L. P. Gas Insurance
Handy Tables for Field Use
Regulators
Flame Weeding
Bibliography
Glossary of Terms
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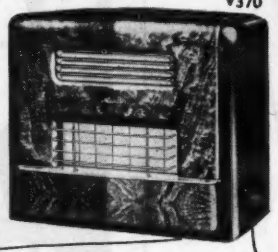
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8 Fully Vented Heaters	23 Unvented Heaters
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CLEANER, because it is not "messy" to use.

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eration to capitalize more fully on the corporation's trade name. In the past, both "Sunbeam" and "American-Standard" have been used in the division's advertising, promotion and identification material. Concentration on the more widely known "American-Standard" will facilitate expansion in the field of summer and winter air conditioning, Mr. McNeill states. This change in name involves no change whatsoever in the division's policies or activities.

The Air Conditioning division produces air heating and air cooling equipment for residential and commercial installations.

Roberts Honored for Saving Life of Butane Driver

A. L. Roberts, owner of Roberts Directional Drilling Co., of Corpus Christi, Texas, was presented a special award for valor by L. E. Davis, chief safety engineer of the Pan American Insurance Group of Houston, for his outstanding heroism recently in saving the life of Carl Swanson, truck driver for the Liberty County Butane Co.

Mr. Roberts encountered a wrecked butane gas truck on Highway 90 balanced precariously on the San Jacinto bridge near Houston. Butane was escaping from a damaged valve and covering the area. Completely disregarding his own safety, Mr. Roberts pulled Mr. Swanson, who was paralyzed from a neck injury received in the accident, out of the truck cab and carried him to safety.

Those who assisted Mr. Davis in the presentation of the award were the State highway patrolman, Sgt. L. E. Gossett, and Billy Zwerschke, of the Calhoun County Butane Co., the latter representing the Texas butane gas industry.

Sales Potential Good For Gas Water Heaters, Dryers

Sales of automatic gas water heaters during 1955 could reach a level of 2.85 million units, under optimum conditions of product design and sales promotion activities, and with economic conditions remaining at 1954 levels. Potential sales of 16.5 million units are indicated in the five years ending in 1959, according to studies by the American Gas Association.

If automatic gas water heaters maintain only the present degree of consumer acceptance, and business conditions remain unchanged, sales during 1955 should aggregate 2.35 million units, and a total of 12.8 mil-

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FEATURES GALORE!

The glamorous appearance of the 1955 Enterprise is made even more glamorous by the satin chrome finished back panel, with automatic clock and contoured oven doors. The acid resistant white porcelain Enterprise range is the pride of any woman's kitchen. The Enterprise range sells itself to your customers because it is, and looks the top quality range it was built to be. The Enterprise range is built expressly for the modern woman.

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—by tapping America's vast pool of available investment capital—ready to buy securities in established, profitable companies.

We are well equipped to serve companies whose immediate capital needs are from $250,000 to $1,000,000.

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The NEW MODELS have Plenty of Eye Appeal Plenty of Sales Appeal

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2 — Pleasing to Live With
3 — Good Heat Producers
4 — Sturdily Built
5 — Vented or Unvented
6 — Radiant or Circulating
7 — 8,000 to 60,000 B.T.U.

New RADIANT CIRCULATOR Unvented

Model 3244 has porcelain enamel body finished in the new "mocha-tone" color. Radiant opening insert finished in "Hi-Heat" silicon gold enamel. Chrome dress guard. 21¼" high, 16¾" wide, 11" deep. 20,000 B.T.U.

Model 3305. Same style — 19½" wide. 28,000 B.T.U.

Write for Literature and and Price List on 60 Different Models and Sizes.

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lion units will be sold during the 1955-1959 period.

Total potential sales of automatic gas clothes dryers during 1955 are estimated at 300,000 units, with the maximum of sales promotion effort and product design. Gas incinerator sales could total 140,000 units under these conditions if 1954 economic levels prevail. For the 1955-1959 period potential sales of gas clothes dryers are estimated to be 2.2 million units, while sales of gas incinerators could rise to 1.2 million units.

In consumer acceptance should continue at present levels and business conditions remain unchanged, sales of gas clothes dryers and gas incinerators during 1955 should amount to 250 thousand units and 110 thousand units respectively. The corresponding totals for the five-year period would be 1.65 million gas clothes dryers and 700,000 gas incinerators, at present promotional and economic levels.

Actual sales of gas water heaters in 1954 totaled approximately 2.34 million units. Sales of gas clothes dryers were one-third greater than in the preceding year, with the gas clothes dryer sales showing an improvement of 26% in the share of total dryer sales over the proportion of total dryer sales represented by gas dryers in 1953.

Bottled Gas Corp. Purchases Windsor Firm

Bottled Gas Corp. of Virginia has purchased the Marvin G. Eley Bottled Gas Service, Windsor, Va., and will operate the gas service in conjunction with its Suffolk office as the Heatflame branch, according to an announcement by E. Otto N. Williams, president of Bottled Gas and of Heatflame.

Marvin G. Eley will manage the Heatflame branch from the Windsor office. Mr. Eley was one of the first distributors for Bottled Gas and has operated his firm since 1941. He will be assisted by Mrs. Elizabeth Bracey, assistant manager, working from the Suffolk office. C. C. Bracey will be service supervisor of the Suffolk office.

Green's Fuel Acquires St. Augustine Gas Co.

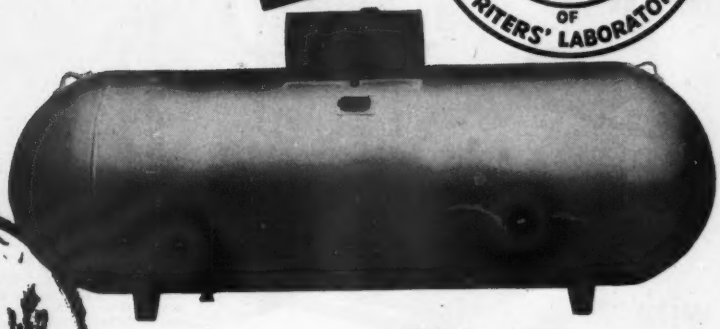
Green's Fuel of Florida Corp. has acquired Suburban Gas Co. Inc. of St. Augustine, Fla. This operation will be continued under the management of Albert W. Spiller Jr. and the name will be Suburban Gas Co., division of Green's Fuel of Florida Corp.

Albert W. Spiller Sr., who founded Suburban Gas in 1937, has retired.



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Anywhere, McNamar can save you money by truck or by F.I.T. rail shipment. Whether it's a 115 gallon domestic system or a 6000 to 30,000 gallon storage tank, we can meet your requirements . . . for size . . . quality of workmanship . . . speed of delivery. So lets talk cents — make your next tank a McNamar.

- UL approved on all standard sizes.
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- Three liquid lines (Built in excess flow).
- 115 gallon to a 30,000 gallon storage.

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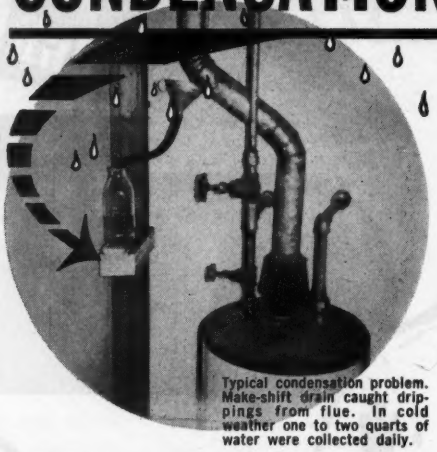
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Typical condensation problem. Make-shift drain caught drippings from flue. In cold weather one to two quarts of water were collected daily.

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Now . . . you can quickly and easily solve your customers' condensation problems. Simply replace the offending gas flue with AMERIVENT — the insulated double-wall flue pipe. It's guaranteed to stop vent failures and condensation damage.

Amerivent is called the "perfect" gas flue because it's EXTRA HOT inside, to prevent condensation and insure a fast, positive venting action — and because it's EXTRA COOL outside, to prevent fire hazards and hot walls.

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Write for our new brochure which explains the cause and the cure for flue condensation. You'll find it very helpful when explaining condensation to a customer.

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"Motivation Research" Uncovers Information Useful to LPG Promotion

In a recent article which appeared in newspapers all over the country a GE official predicted that by 1965 farm use of electricity will have risen 400%. This may be only wishful thinking on the part of the competition, but it points up the evident activity, careful planning, and organized effort on their part to reach that goal.

To help combat this organized activity, the National Council for LP-Gas Promotion has been working to unify industry advertising efforts. At the recent Natural Gasoline Association meeting in Dallas, and also at the LPGA convention in Chicago, findings of a consumer study made by the National Council and its advertising agency were discussed. The advertising agency, McCann-Erickson Inc., has uncovered some interesting and useful facts by means of its "motivation research," and these were related by Peter G. Peterson, vice president and director of marketing services.

For one thing, the use of LPG for one appliance in a home does help promote its use for another, but does not guarantee this use. Many instances were found where LPG users preferred and actually used other fuels for certain competitive appliances. They had been sold on one use of LPG but not on the others.

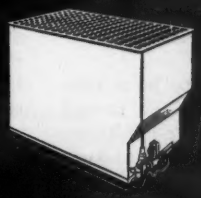
Another interesting point concerns variations in customers' opinions of LPG usage for different appliances. Many customers seem to look at each appliance as a separate purchasing decision. They have different outlooks regarding LPG for one appliance than for another, rather than having one opinion of "modern gas living" as the industry would like them to have. Fortunately, many of the prejudices against the use of LPG for a particular appliance are based on misconceptions which can be corrected through proper information. This means, however, that in advertising the LPG industry must attack the problem of how to sell each appliance as a separate problem.

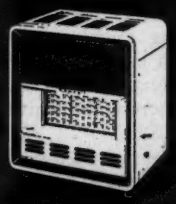
The LPG range presents the industry with one of the most pressing problems, Mr. Peterson pointed out, since many misconceptions exist regarding its safety, its ease of control, its cleanliness, and its modernity. This last item has been harped on by



the meaning of quality . . .









Quality and Temco are two words that are bracketed together in the minds of most gas appliance dealers and purchasers. And for a very good reason.

For 30 years Temco has aligned its research, engineering, and production with quality standards. To us, quality means more than "good." It means the best.

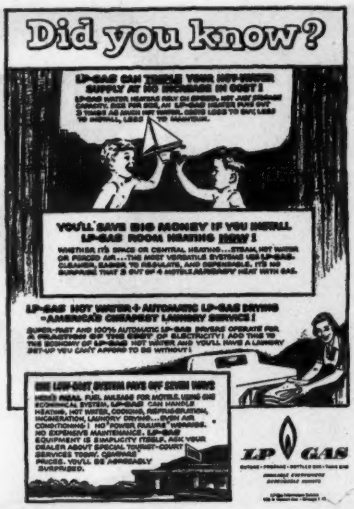
At Temco quality means the finest materials, the best craftsmanship, the most skilled personnel obtainable—producing more than 1½ million of the finest gas appliances made. In a word, *quality means Temco.*

TEMCO, inc.

NASHVILLE, TENNESSEE

Builder of over 1½ million gas appliances





These two advertisements, prepared by the National Council for LP-Gas Promotion, illustrate the new technique being used. By use of this type of ad a lot of different ideas can be presented at once. The council has also found that more people have read these ads completely.

our electrical competitors for so long that we have a job on our hands to set the public right in this respect. We have the equipment to do it, but educating the people to the fact that we do have it remains to be done. Many fallacious opinions of the gas range are based on models 10 years old and more, and it is vital that everything possible be done to overcome these opinions.

Another point uncovered by this research deals with heating the home with LPG. The surface has been barely scratched in this huge potential use of gas. The quick, clean, and automatic heating that LPG provides are qualities which the customer wants and appreciates. And more and improved off-peak-usage equipment is being developed and put on the market for handling the imbalance created by winter heating loads. Brooders, irrigation pumps, tractors, and flaming devices are all items useful to the farmer, and items that help to balance the dealer's summer-winter ratio.

Working closely with McCann-Erickson and the council is the Cramer-Krasselt Co. of Milwaukee, one of the nation's leading specialists in the production of dealer-level advertising. Its Vice President Swenson pointed out that as necessary as national advertising is, it does not close the order. It's reaching millions of potential buyers throughout the country and softening them up, and putting them at least in a mood to consider L. P. gas, but it is the dealer who has the customer sign on the dotted line. Selling and promotion follow-through on the part of the industry's distribution factors are very important.

In order to get closer to the men whom they were to counsel, representatives of Cramer-Krasselt traveled all over the country and talked with large-volume operations, wholesalers, bulk plant operators, and small groups of dealers. Their findings were encouraging. For one thing, there is a universal awareness of electric competition and the need for maintaining and developing LPG markets.

There also seems to be a real awakening and desire to do something, even though many don't know just what to do or how to go about it. They are looking for leadership.

State and local groups are seriously discussing cooperative advertising and promotional programs in their local markets, and some are already filling the gap between national advertising conducted by the council and dealer-level advertising and promotion. Typical of the trend of such cooperative campaigns in the recent development is Iowa. This state group has already decided on a statewide campaign to back up the national effort. The program includes 100 or more 24-sheet billboards strategically placed over the state. The billboard campaign will be supported with a series of ½-page ads in the *Des Moines Register* Roto or Farm section. Circulation of this paper blankets the entire state of Iowa.

Each quarter the council mails merchandising kits to a list of approximately 7000 wholesale operators, bulk plant operators and dealers, and contributors to the program. The main feature of the current mailing is a drive on water heating. Included in this kit are six newspaper mats which tie in with national ads, a selection of store display material, and pieces of direct mail or hand-out material. Also included in the kit are radio spot records, billboard posters, and car cards.

Vice President Gilliatt of McCann-Erickson reports that its studies have shown that people are more interested in the direct benefits they derive from using the fuel rather than the fuel itself. They are interested in "What are the advantages for *me*?" For this reason ads prepared for council use deal directly with better cooking control, faster hot water, cleaner house heating, dependability, modernity, and a host of other benefits rather than describing properties of the gas or equipment for its utilization.

"We cannot sell L. P. gas as a fuel that has everything," Mr. Gilliatt remarks. "We believe that we must sell the benefits of the fuel in the various types of appliances and equipment."

Mr. Gilliatt also presented a picture of the national advertising efforts of his agency on behalf of the council. He listed the periodicals in which LPG ads are appearing. *The Farm Journal, Progressive Farmer, Household* and *Town Journal*, and many other regional magazines reaching the farmer and rural resident, were cited. In 1955 the agency expects to place advertising that will total more than 100 million impressions.

The format which was chosen for these ads is referred to as the "cartoon-like" or "Believe It or Not" technique. Studies by the agency show that this type of ad commands far greater reading than most other black and white ads. Some tests have shown that readership is up seven times over conventional approaches.

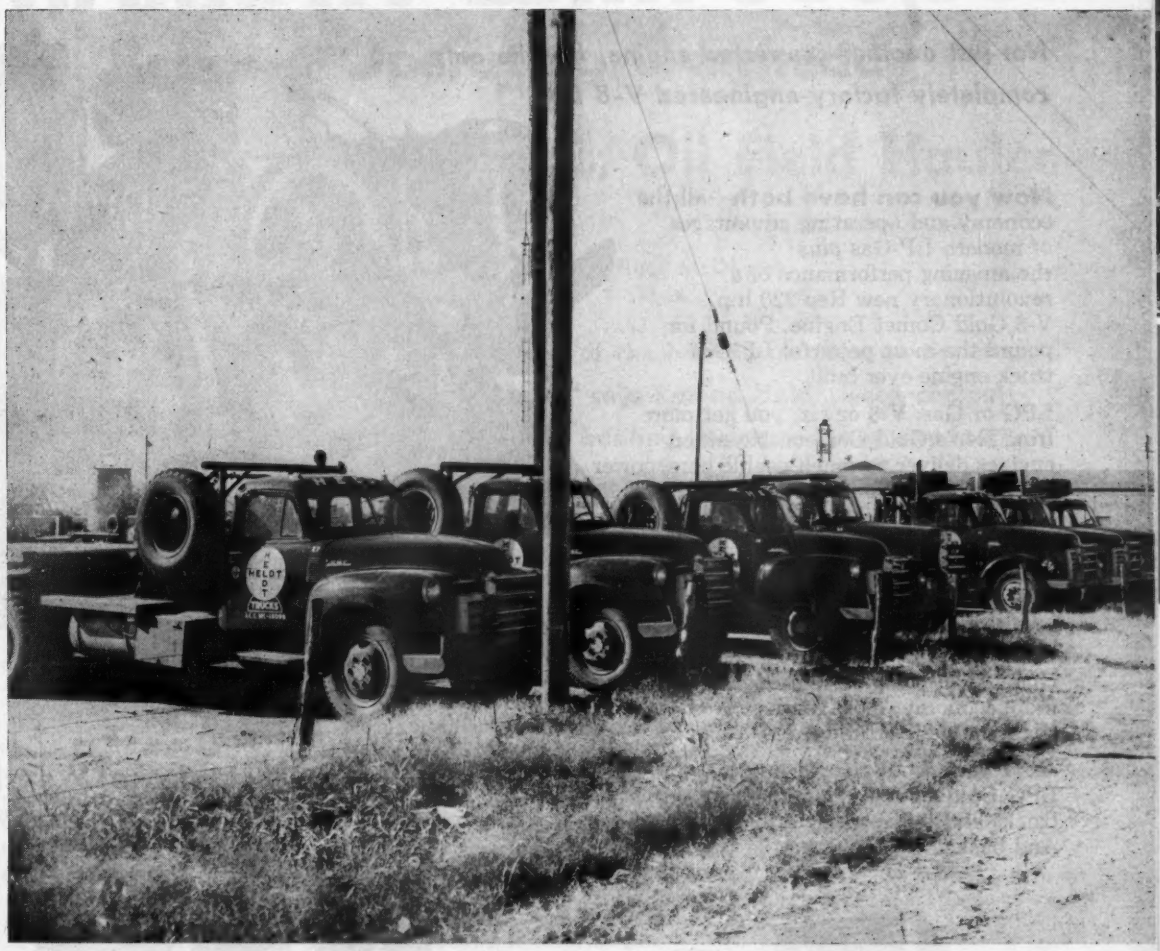
This technique permits the use of unrelated LPG uses in each ad. Strong selling messages for water heaters, chick brooders, heating and air conditioning units, and tobacco curing can thereby be featured in a single ad.

The loose-leaf pattern of this type of ad permits lifting out a segment which does not apply in a particular area and replacing it with a more important item for that section. For example, the agency plans to run in the near future an ad which features tobacco curing in certain states, irrigation and pumping in others, and crop drying in still others. The ad can be tailored to any special market condition. ■

Butane-Propane

POWER SECTION

INSTALLATION • CARBURETION • SERVICING



Some of the 76 trucks used by Heldt Bros. in Alice, Texas, for oil field hauling. Thirty-eight of the units have been converted to butane.

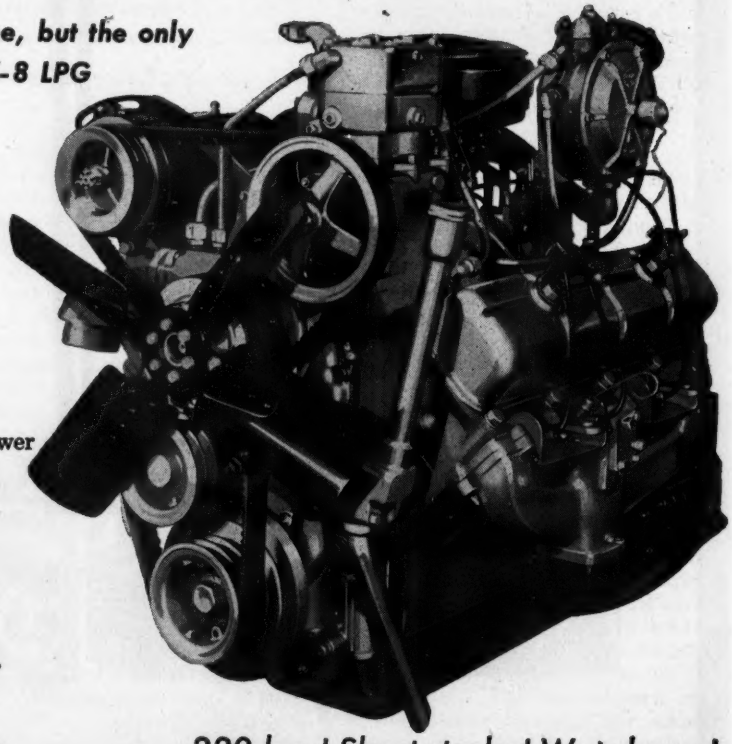
(For a story about this oil-field trucker and how it reduced operating costs with butane, turn to page 145.)

NOW! A REO V-8 LPG

specially built for LPG and it's backed by a

100,000 MILE WARRANTY

Not just another converted engine, but the only completely factory-engineered V-8 LPG

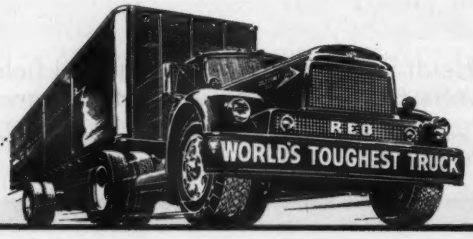


Now you can have both—all the economy and operating advantages of modern LP-Gas *plus* the amazing performance of a revolutionary new Reo 220 h.p. V-8 Gold Comet Engine. Pound for pound the most powerful LP-Gas truck engine ever built.

LPG or Gas, V-8 or *six*, you get more from Reo's Gold Comets. No other engines deliver so much usable horsepower to the wheels. No other engines have advanced wet sleeve construction throughout. No others can be maintained and overhauled at just a fraction of standard cost. Only Reo Gold Comets!

A Reo Gold Comet in a tough Reo chassis will give you more performance, more economy, more efficiency than you've ever known.

Ask today about the revolutionary Reo LPG Gold Comet engines, in rugged Reo trucks and buses specially built to your job. And backed by 100,000 Mile Warranty.



220 h.p.! Short stroke! Wet sleeve!

All advantages of advanced Reo Gold Comet Engineering!

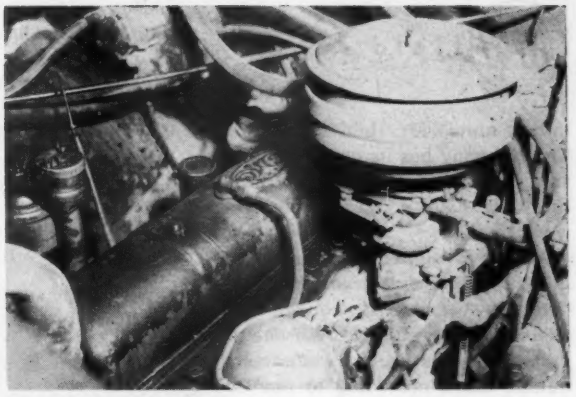
REO

SUBSIDIARY OF **BOHN** ALUMINUM & BRASS CORPORATION

Reo Motors, Inc., Lansing 20, Michigan; Toronto, Ontario



Roland Heldt, one of the owners of Heldt Bros. in Alice, Texas, says, "We save the cost of the butane installation the first year in fuel alone."



Engine of one of Heldt's butane-powered trucks, showing conversion equipment. Heldt Bros. has found butane best for trucks under 5 ton.

Butane Reduces Operating Overhead For Alice, Texas, Oil Field Hauler

By Ruel McDaniel

"We save the cost of the butane installation the first year in fuel alone," says Roland Heldt. Keen competition in the oil field hauling business makes any factor that reduces cost desirable, and butane fills that bill for Heldt Brothers, veteran hauler in Alice, Texas.

OIL-FIELD hauling is a specialized and rugged business. Anything that reduces costs a little here and a little there is important, for competition in the business is stiff and the price of the services must be held down for that reason.

Thus when Heldt Brothers, Alice, Texas, said to be among the largest oil-field truckers in America, discovered butane, it discovered a vital factor in reducing operating overhead, according to Roland Heldt, one of the owners.

Of the 76 units operated by the company out of main headquarters in Alice and two more branches, 38 are powered with butane. As fast as the company buys new trucks of the size found to be best adaptable to butane, they are converted.

Under 5 Tons

"We have found that butane is particularly excellent for our trucks under 5 tons," Mr. Heldt explains. "We're using diesel on the heavy units above 5 tons, at least for the time being."

The company has the conversions made at the truck distributors' service plant. It costs $350 to switch over to butane, including the cost of the Ensign carburetion equipment and two fuel tanks with a capacity of 76 gal. each. A tank is on each side of the truck, below the bed so that it does not get in the way of loading and unloading.

"We save the cost of the butane installation the first year in fuel alone," Mr. Heldt declares.

The company pays 20½ cents a gal. for gasoline and 21 cents for diesel. Butane locally costs 12½ cents a gal.; thus the fuel saving alone is appreciable.

However, fuel saving is only one factor in the over-all economy of butane, according to Mr. Heldt.

For example, the maintenance department changes oil in all butane-powered units every 5000 miles, because there is less leakage around pistons and the oil is not contaminated nearly as fast as that used in gasoline-burning units. The maintenance crew changes oil in gasoline-powered trucks every 1000 miles. Thus the saving in oil alone is an important factor in figuring the economy of butane.

Lower Maintenance Cost

General maintenance cost of butane-powered units is considerably lower than on gasoline and diesel-powered units, the company finds, because there is so much less wear on vital parts in the butane units.

"We have practically no mechanical or carburetor trouble with our

butane units," Mr. Heldt emphasizes. The company has its own mechanics trained to service the butane units, but they have comparatively little work to do.

"We have found that one necessity in utilizing the full economy of butane, however, is to have one or more men especially trained to service the units. That has been a weakness in butane units, according to our observation. When something does go wrong with a butane unit, it is difficult to find a mechanic who knows what to do about it. We overcame that problem at the outset by training one of our best men to service these units. He in turn has trained others as we needed them."

Company Specializes

This company has specialized in oil-field trucking for 26 years. Its average run is 100 miles turn-around. However, occasionally the company has a run as far distant as Houston, which is 234 miles. The two 76-gal. tanks hold enough fuel for this round-trip. Once in a while it is necessary to re-fuel on extra long hauls, but the company has experienced only minor trouble in obtaining butane wherever it needs it.

The dispatcher has a list of butane service stations throughout the territory served and he is able to give the driver of a long-haul run the names and locations of re-fueling stations along the way in case he does need additional fuel.

Less Trouble

Drivers like the butane-equipped units, Mr. Heldt declares, because of their trouble-free performance, and when an older driver has a choice of equipment, he invariably selects a butane unit.

The company fuels its butane units in its own shops from a 6500-gal. storage tank. This was supplied by Pearsall (Texas) Hydro-Gas Co., owned by Ernest Thompson. The concern also supplies the gas.

The trucking company also has storage tanks at its other two operating branches at Freer and Sullivan City, and the Pearsall concern furnishes gas here as well.

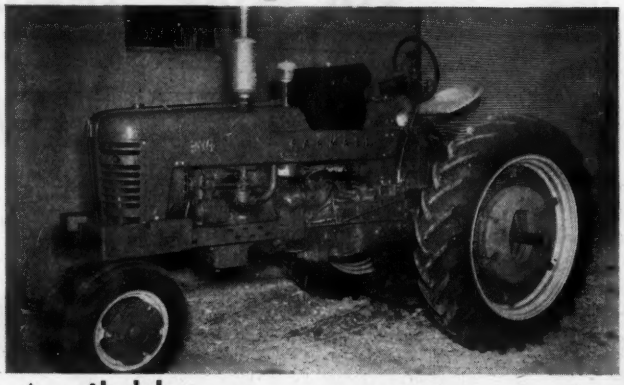
Butane is more than normally profitable for use in the trucks of 3 and 4 tons, Mr. Heldt emphasizes. He adds that it is economical in smaller units and in those somewhat larger, but the 3- and 4-ton units seem to fit the maximum in economy, both in fuel savings and maintenance costs.

More Than With Diesel

The savings from butane are more when compared to gasoline than diesel as a fuel, Mr. Heldt stresses, particularly from the standpoint of oil-changes and over-all maintenance costs.

"You just can't beat butane when it comes to cutting mechanical maintenance costs," he says. "Butane just naturally is easier on all the moving parts of a motor because of its quick and complete burning and lack of damaging residue to go into the crankcase and stick on the piston heads and sides." ■

ANOTHER WESTERN TANK first



Now Available . . .

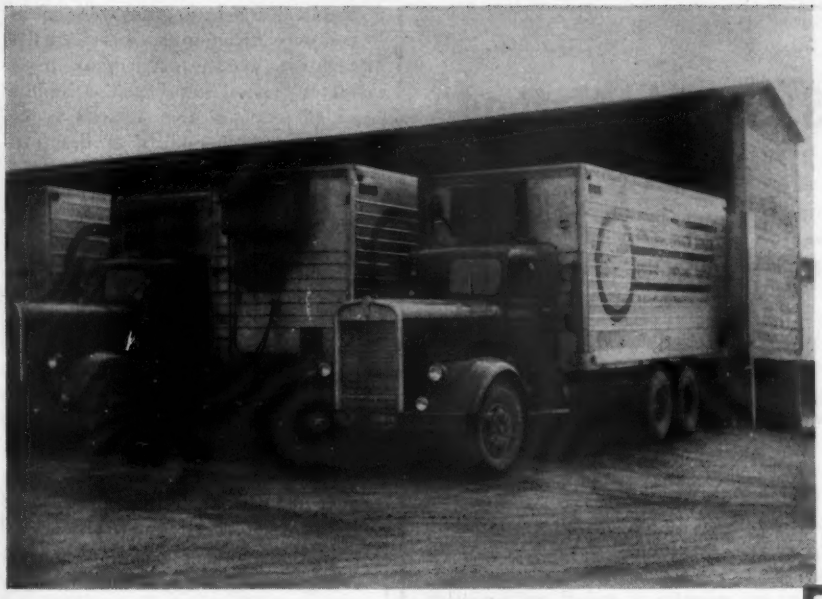
FARMALL '300'

Western LPG Tank

Because the Western LPG tank for the Farmall "300" is manufactured to close tolerances demanded by the factory, you're assured of a perfect fit every time. Western tanks are furnished in appropriate colors, with factory design for quicker, easier installation.

Western TANK AND STEEL CORP.

POrter 5-9474 Box 1013 Lubbock, Texas



BPN staff report

United Truck Line refrigeration units load at Armour's packinghouse in Spokane. Meat is usually hauled to Seattle or other towns on the Pacific Coast.

L.P. Gas Provides Dependable Refrigeration for United Trucks

To a firm which trucks meat and farm products, dependable refrigeration is essential. United Truck Lines has assured itself of steady refrigeration, even when week-end layovers are necessary, by converting its 110 units to LPG. Operating cost, "down time," and maintenance have also been greatly reduced.

By Harold C. Hood
Field Editor

HAULING meat and farm products between Spokane, Wash., and coastal cities to the west comprises a large part of United Truck Line's business, and dependable refrigeration is vitally important. Every day many tons of meat bearing the familiar labels of Armour, Swift, and other well-known meatpackers in the Spokane area are refrigerated with the help of propane on their way to the coast.

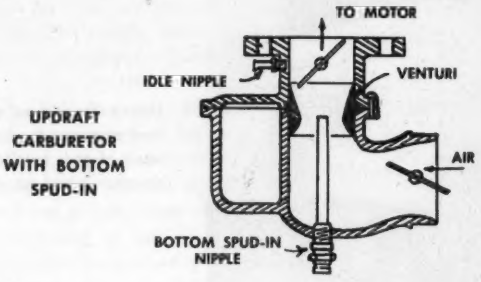
All of United's 110 refrigerated units, 24-, 35-, and 40-ft trailers, have been converted to LPG use, and according to George Jackman, shop foreman in charge of equipment maintenance, operating expense and maintenance trouble have been greatly reduced.

The conversion movement got under way about five years ago. Up to that time gasoline had powered all of the air-cooled Briggs & Stratton, Wisconsin, and Onan engines used on the 25- and 35-ft trailers, and the Waukesha water-cooled units mounted on the 40-ft models. Because of long steady periods of running, the engines were giving a great deal of mechanical trouble and putting entire units out of operation until defective parts could be replaced. The run to Seattle and back generally meant that refrigeration would be operating steadily for 24 hours per trip, and when week-end layovers were necessary, engines ran 72 hours without being shut off. Carbon formation constituted the main source of trouble, resulting in frequent broken connecting rods and heads. Replacing these and grinding valves required the full time of three mechanics. According to Mr. Jackman, repairing these small gasoline engines was one of the biggest headaches of the entire operation, and was one of the largest single causes of "down-time" of the trailers.

In 1948, Mr. Jackman and other members of the company responsible for dependable, economical operation of the fleet decided to check into the possibilities of converting to propane in the hopes that maintenance problems would be reduced. The first few conversions made on a trial basis proved extremely satisfactory, and it was not long before all refrigeration units were operating on LPG.

Ensign carburetion was installed on the larger 16-hp units and most of

The J.&S. Spud-In Method

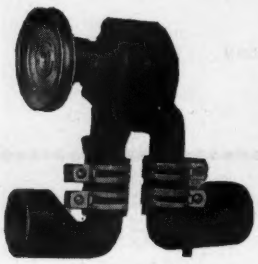


NOTE: *We recommend the use of the SPUD-IN METHOD of converting the carburetor to LP gas, wherever possible. This consists of drilling a hole in the gasoline carburetor used on the engine, and inserting a special pipe nipple into the air stream so that the gas is sucked in and mixed with air, much as the gasoline jets inject gasoline in the airstream. This method permits our dealers to carry only one Universal Kit in stock, with a few inexpensive nipples, yet be able to convert most any truck, car, tractor or stationary engine. You need no big inventory of updraft and downdraft carburetors of all sizes and shapes, with various flange adapters, venturi and parts. There is no worry about getting the throttle linkage right, or selecting the proper venturi and gasoline jets, or making the air cleaner fit. You simply use the carburetor that the engine manufacturer has perfected for the job.*

J.&S. CARBURETOR COMPANY
P.O. BOX 10391 DALLAS, TEXAS
"TWENTY YEARS IN GAS CARBURETION"



4 CYLINDER MANIFOLDS



WATER PUMPS

JOHNSON'S

High Compression

Pistons • Manifolds • Pumps

Butane Manifolds for John Deere Modesl "G," "A," "B," "D"

Butane Manifolds for International "H" & "M," "W9"

Butane Manifolds for Allis Chalmers "W," "WC," "WA," "WF," "UC" & "MC"

Water Pumps for John Deere Models "G," "A" & "B"



ALUM. DOME-HEAD PISTONS



COLD MANIFOLDS

• ***Write Today*** **For Price Lists and Dealer Discounts**

Johnson Machine Shop
914 E. Howard St., Pontiac, Illinois

Connally Bearing Co.
Amarillo, Texas
Implement Dealers
Randolph, Iowa

the smaller 8-hp engines were equipped with Algas units. One of the first results noticed was a decrease in the amount of oil dilution. The number of oil changes was reduced to approximately one-third of that previously required.

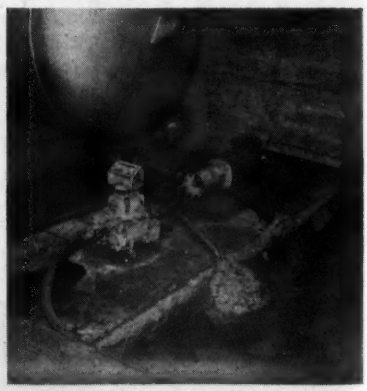
Increased Horsepower

Carbon deposits in the cylinders have been completely eliminated, and heads and connecting rods seldom have to be replaced. Horsepower has been increased an estimated 10% with a consequent throttling back of all engines. The former rate of three engine overhauls per year has been reduced to one per year on an average, and less than that on some of the units.

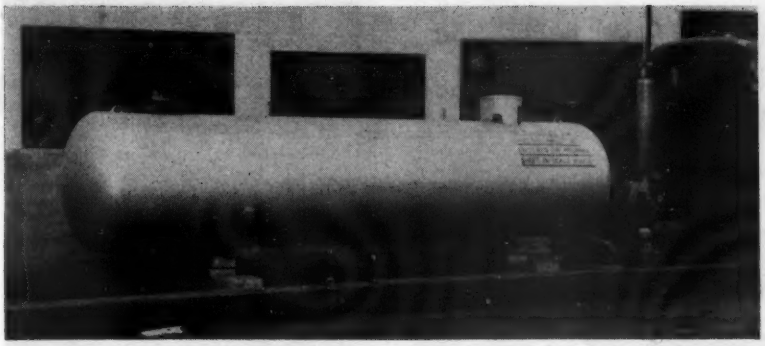
In the days of gasoline-powered refrigeration, an appreciable number of fires were started when hard braking caused gasoline to slosh out of vents and poorly fitting caps. With



Refrigeration unit mounted on one of United's trailers. This 16 hp engine runs on propane.



Gas loaded into the tanks on trailers and trucks is always metered so that a record may be kept of the amount of propane used by each refrigeration unit.



A 1140-gal. propane storage tank, serviced by Western Gas & Power, is used to refuel United's trucks.

the advent of propane, this hazard has been eliminated, and no fires have occurred since the conversion.

Automatic chokes on the gasoline-operated engines frequently called for more gas when the engines were running at normal temperatures, because of cold air from the trailers' slip-stream rushing past automatic controlling devices.

The result was that engines were flooded, using excess fuel and not running at peak efficiency. Propane, requiring no choking, has also eliminated this problem.

LPG is delivered to United's 1140-gal. capacity tank by Western Gas & Power Co. of Spokane. The storage tank is equipped with a Smith pump and propane delivered to the trailer tanks is metered, enabling a careful check to be made of the consumption of each unit. Approximately 5000 gal. per month are consumed by the total operation.

Less Damage

All trailers are equipped with standard 25-gal. tanks mounted under the trailer bed just ahead of the rear wheels. United has found that by being mounted in this position tanks receive less damage than in any other location on the trailers. By being close to the wheels tanks cannot be damaged when landing legs are cranked completely up.

Not only has engine life been increased better than 200% on the average refrigeration engine, but operating economies have also been realized. Propane costs the company approximately 3 cents per gallon less than gasoline, and because of increased horsepower and consequent throttling back, engines run longer per gallon of propane than per gallon of gasoline. The elimination of one man on the maintenance crew has also reduced operating expenses.

The last 10 refrigeration units to be installed have been purchased with factory-installed propane systems, and according to George Jackman, so will all future ones. The reduction in maintenance and more economical operation effected by its use have given propane another staunch supporter—the United Truck Line. ■

BUILD UP YOUR SUMMER FUEL LOAD Now!

DEALERS— with BEAM® BUTANE-PROPANE CARBURETION EQUIPMENT



No need to hire trained personnel to service BEAM equipment. Your own employees can do the job.
A BEAM dealership is a trouble-free highly profitable operation for any L-P Gas dealer . . . Write for details today.

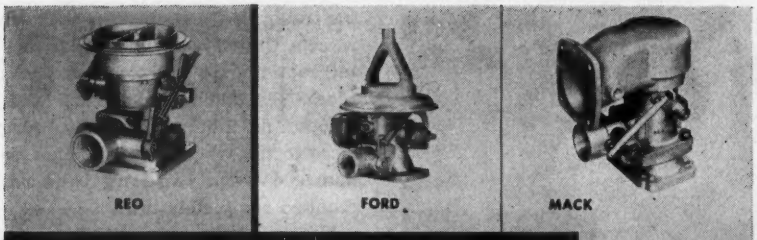
BEAM PRODUCTS ARE NATIONALLY ADVERTISED

BEAM . . . is compact—easy to install—no complicated parts or altering of gasoline carburetors.

BEAM . . . has just two simple adjustments to make installation easy. Quick, sure starting . . . and motor will run on gasoline again with the flick of a switch.

Write or phone for information on how you can profit from a BEAM dealership.
Chapman 5-5791

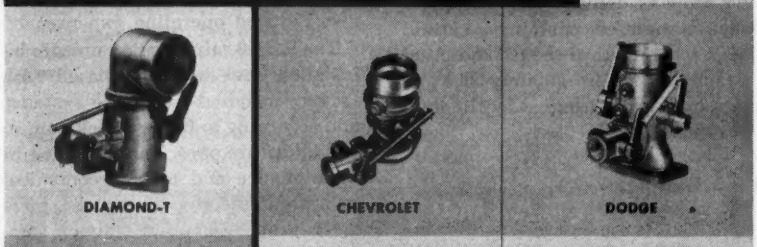
THE PARKDALE COMPANY
Best Buy
BUTANE-PROPANE CARBURETION
1040 ROSSLYN ST. LOS ANGELES 65, CALIF.
REGULATORS CARBURETORS · SOLENOID VALVES



CENTURY

METERING VALVE LP-GAS Carburetors

3C Controlled Combustion Carburetion





For All Trucks

ENGINEERED *for each engine*

CALIBRATED *to each engine*

PRE-SET *to a performance curve*

NOT AFFECTED BY...

TEMPERATURE CHANGES
HIGH OR LOW ALTITUDES
CHANGING GAS PRESSURES

STARTS INSTANTLY *in coldest weather.*
GIVES INSTANT *power—no choking or fluttering.*
IDLES PERFECTLY *in all conditions.*
BALANCES POWER *of each cylinder.*
NO MULTIPLE ADJUSTMENTS *—tune up only.*
PERFORMS AT ALL *speeds to pre-set perfection.*

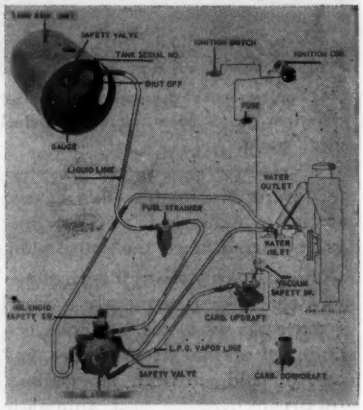
Set it! Seal it! Forget it!

CENTURY GAS EQUIPMENT CO., 11188 Long Beach Blvd., Lynwood, Calif.

Power Products

To secure further information on these products, refer to coupon on page 91.

16. Conversion Kits



Clark Equipment Co. has announced that users of gas-powered Clark fork lifts can now have their machines adapted to liquefied petroleum gas power through installation of a conversion kit recently made available.

The kits include the same components used in L.P. gas production models built at Clark's factory with Underwriters Laboratories approval. Items furnished with the kit are individually UL-approved also.

Conversions can now be made on Clark's standard "Clipper," "Carloader," "Yardlift 40" and "Utilitruc" model fork lifts. Kits for other models will be available soon.

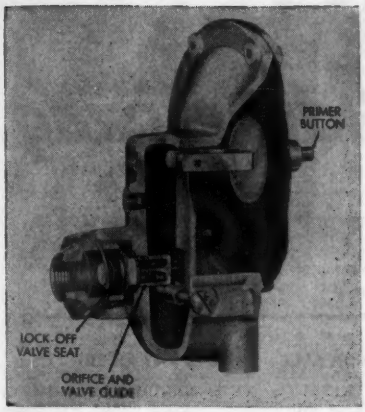
Clark Equipment Co.

17. Regulators

Approval of the Underwriters Laboratories has recently been given to American Liquid Gas Corp.'s full line of atmospheric regulators. These regulators have positive lock-off design and provide sensitive regulation at the wide inlet pressures ranging from 6 oz to 5 lb, without orifice change.

High lever ratio in the mechanism and large diaphragm provide sensitivity at opening, resulting in improved idle characteristics and excellent starting.

Regulators may be used on oil field pumping engines, electric generating light plants, industrial tractors, lift trucks, farm utility, tractor engines

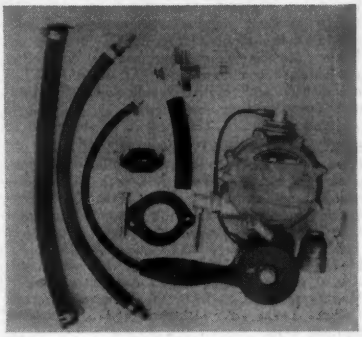


and other similar types of applications.

The size of these units permits easy installation near the mixer or carburetor, thus gas is supplied to venturi with minimum of lag and response.

American Liquid Gas Corp.

18. Dual-Purpose Vaporizer



A special engineered L. P. gas conversion kit for Chrysler engines has been announced by J & S Carburetor Co. This kit will convert all Plymouths, all Dodge 6s through 265 cu in., and all Dodge V-8 cars and trucks. It will also fit straight 8 and 6 Chrysler and DeSoto cars, and all but the bigger Chrysler industrial engines.

The unit features a vaporizer mounted in a casting which serves the dual purpose of mounting bracket and water-inlet connection. The casting has a flange which sandwiches under the thermostat housing on the engine.

Only one water hose is needed. No mounting holes to drill, no bracket to make. One hose connects unit to the carburetor. The low-cost spud-in method is used for converting single-barrel carburetors, while dual carburetors require an adapter. The complete kit includes all needed bolts, gaskets, hoses, clamps, nipples, adjusting block, and filter.

J & S Carburetor Co.

LPG-Equipped Tractors Increase 23% in 1954

Tractors using L.P. gas as their fuel continued to win acceptance by farmers during 1954. Last year, the number of L.P. gas tractors rose 23%, according to national survey reports released by the Liquefied Petroleum Gas Association. This increase brought the total number of tractors running on L.P. gas to 197,000 units.

The study also showed that the number of L.P. gas trucks, buses, stationary engines, and lift trucks increased more than 42% in 1954. Approximately 92,000 such units were using the fuel at year's end.

Conducted under the supervision of the association's Market Research Committee, headed by A. W. Gruer Jr., Magic Chef Inc., St. Louis, the annual study covered 90% of the manufacturers of LPG carburetors and factory equipped propane tractors.

Money may be the husk of things, but not the kernel. It brings you food, but not appetite; acquaintances, but not friends; servants, but not faithfulness; days of joy, but not peace or happiness. — Henrick Ibsen.



BPN CLASSIFIED Advertising

All Classified Advertising payable with order. Copy must reach publisher's office prior to the fifth of the month preceding publication. Address: Classified Advertising Material, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Calif.

DISPLAY CLASSIFIED

$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt display type for headings. Set with 1 pt border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word. Set in 7 pt type without border. $3.00 minimum charge per insertion. If Blind Box number care of B-P News is used, count as five words.

HELP WANTED

LARGE AND NATIONALLY KNOWN tank fabricator wants salesmen to call on L. P. G. dealers and distributors in Alabama, Arkansas, Florida, Georgia, Louisiana. Also other states. Salary and commission arrangements. Give full facts first letter. Reply Box 630, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

MAJOR PRODUCER AND MARKETER OF L. P. gas has ideal opportunity available for qualified and experienced sales representatives, between 25 and 35 years of age. Should have college degree in business or engineering and minimum of three years' experience in L. P. gas wholesale distribution. Attractive salary commensurate with experience and qualifications. Our employees know about this advertisement. Send detailed personal history, work experience, and photograph to Box 635, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED—SALES MANAGER. WE SELL an intangible called "better living." If you have vision, willingness to work hard, a college education, opportunity awaits you with a southern Indiana L. P. Gas Company. Reply Box 65, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

AGENTS WANTED: "LEAK DETECTO BRUSH." Add to your present line. Retails $3.75, commission 25%. Send for sample less 25% and literature. Every gas company and appliance dealer a prospect. We guarantee a demonstration will get order. Gas Appliance Stores Inc., Columbia, S. C.

WANTED: SALESMAN TO BE ASSISTANT to manager. Guaranteed income and transportation furnished. Location in Eastern Oregon. Possible for right man to advance. Reply Box 610, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED: EXPERIENCED GAS APPLIance salesman, combination utility (propane-air) and bottled gas system, protected territory, excellent proposition, only best with proven record need reply. Located in progressive Western North Carolina. Real opportunity for a go-getter. Reply Box 615, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

MANUFACTURER'S REPRESENTATIVE —Nationally established heating equipment manufacturer making quality gas-fired boiler of unique design and sales features wants representatives with full knowledge of wet heat and sales outlets. Excellent territories open. In reply give detailed experience ,lines handled and territory desired. WARD HEATER COMPANY, PETALUMA, CALIFORNIA.

BUSINESS OPPORTUNITIES OFFERED

$6000 CASH BUYS SMALL PROPANE Business. Includes 300 gal. tank-truck, tanks in service, etc. Expansion possibilities unlimited. Located 35 miles north of Los Angeles. Ideal for man and wife. Box 1147, Newhall, Calif.

LPG BULK PLANTS. WE SPECIALIZE IN petroleum properties throughout Midwest. Have number desirable plants for sale. PETROLEUM MARKETERS, 605 Produce Bank Bldg., Minneapolis, Minnesota.

BUSINESS OPPORT. OFFERED - Cont.

FOR SALE: PROPANE GAS BUSINESS for sale in a central Illinois city of 18,000. Serving 565 bulk and 585 bottle customers. Includes nice store building, 3 bulk trucks, 3 service trucks, complete bulk plant, 1194 100# cylinders and all operating equipment. Dollar sales—$184,961; propane sales—888,398 gal. for 1954. Business growing, showing good net profit. $80,000 required for down payment and inventory. Owner will finance balance at 4½% for 10 years or less.

We specialize in petroleum properties.
PETROLEUM MARKETERS
218 W. Mifflin Madison, Wisconsin

PARTNER WITH CAPITAL WANTED—to buy 50% interest in large LP Gas distributing company with 27 branches in Washington, Oregon and Idaho. Excellent consistent earnings. Easy terms. 2710 S. E. 50th Ave., Portland, Oregon.

BUSINESS OPPORTUNITIES WANTED

WANTED TO BUY: BOTTLED GAS OR bulk gas business. Prefer combination of both. Advise number of customers, gallonage, equipment, trucks, etc. Write Box 625, BUTANE PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED BY FINANCIALLY RESPONsible parties a good, clean LPG business with present load of ½ million gallons per year or better. Prefer smaller city in Midwest with good growth possibility. All replies will be kept in strict confidence. Reply Box 620, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE — TRUCKS - TRAILERS

FOR SALE: TWO 5500 WATER GALLON U69 twin barrel propane transports. Good rubber. Nichols Truck Line, Box 1032, Duncan, Okla.

FOR SALE

ONE 3590 GAL. U69, 200#, SINGLE BARREL, single axle Propane trailer, built by Superior Tank Co. Only $2,000.00.

MOLLOY BUTANE, PHONE 151
TAHLEQUAH, OKLA.

FOR SALE: 5000 TO 5500 W.G. U69 Tandem Propane Twin Barrel Trailers. Choice of 16 with 50% 10:20 tires, air brakes. Now operating. Texas R.R. Commission, ICC, ASME approved. Prices $3,750 to $4,500. Delivery will be made to most northern cities for $200. Write for pictures, details. IRVIN F. NELIS ASSOCIATES, P. O. Box 14472, Houston 21, Texas.

TRANSPORTS — SINGLE OR TWIN tank new for immediate delivery 250# W.P. for LPG—265# W.P. for ammonia. Meets ICC regulations. X-rayed and single tanks stress-relieved. Maximum payload, minimum weight. Low center of gravity. Reyco undercarriage, air brakes, best quality fittings, rear manifold, gauges recessed in side center. Trails evenly. Financing arranged. Write or call for quotation. J. B. Beaird Co., Phone 7-4441, Shreveport, La.

FOR SALE - TRUCKS - TRAILERS - Cont.

TRINITY'S NEW EXCLUSIVE MODEL #106 with sectional skirting - 1700 WG capacity W-250 - ICC MC-330 complete with pump, printometer, remote Okadee valves, clutch, power take-off and throttle. Completely installed on new factory LPG powered RP-162 International chassis. Immediate delivery, $5,100.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

NOR-TEX "PACKAGE UNITS" ARE THE time and money savers! 1400 WG U-69 twin delivery unit with trim skirting. Mounted on a new 1955 factory LPG powered International RP-162 chassis, two speed axle. 50 gallon recessed fuel tank, P. T. O., spline jack shaft, Viking mechanical seal pump, 50' filler hose and ICC lights. Painted white enamel over red oxide. Ready to start making you money for only $4,555.43 including taxes, F. O. B. Denton, Texas. Meters, fire extinguisher and cabineting available at low extra cost. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

SPECIAL: AMERICAN "BETTER-BILT" extra lightweight 1500 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1955 2-ton, 2-speed GMC chassis with 8.25 tires —READY FOR SERVICE. PRICED AT $4475.00 tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Sterling 4916.

FOR SALE—1950 GMC, 2 SPEED, 2-TON, 1250 gallon, 250WP—469 Twin Nortex Unit, with 55 gal. minute pump, hose, new mtor, new tires, extinguisher, complete. Now operating—only $2450.00 Super-Propane Corp., Phone 162, Lebanon, Missouri, Lacled County.

SELL MORE with Display Classified Ads

This is an example of the attention getting type faces available in display ads in the BPN Classified Section. Cost is only $12.00 a column inch per issue, an ad this size (3") is $36.00. The large lines above are set in 18 pt. Other available sizes are shown below.

14 POINT DISPLAY
12 POINT DISPLAY
10 POINT DISPLAY

Body type is set in 7 pt like this sample. An average of 7 words to the line.

CLASSIFIED Advertising

BPN

FOR SALE—TRUCKS - TRAILERS - Cont.

A TELEPHONE CALL WILL CONVINCE you that you can REALLY SAVE MONEY, obtain immediate delivery with EASY TERMS, WITH ANY SIZE TWIN OR SINGLE TANK, mounted on any make or model NEW TRUCK, piped complete to your specifications. Get the story from us before you buy, or we both lose money. Write for descriptive literature and prices. 600 to 2300 W. G., 5 Models to choose from. White River Distributors, Inc., Phone 570, Batesville, Ark.

MAKE THE BIG HAUL EASIER... MORE profitable! New 1800 WG U-69 Nor-Tex Twin Delivery Unit equipped for service with trim skirting, 50 gallon recessed fuel tank, ICC lights, Viking mechanical seal pump, P. T. O. and spline jack shaft. Mounted on brand new factory LPG powered International RP-172 chassis with the big 282 LPG engine, 5th overdrive transmission, two speed axle. All ready to start delivering gas for only $5,477.67 including taxes. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

NEW: IMMEDIATE DELIVERY, 1400 WG U69 propane extra lightweight twin barrel delivery unit. Mounted on new 1955 2-ton, 2-speed Chevrolet truck with big engine. Fill and vapor hose assemblies-Viking Mechanical Seal Pump —Power take-off assembly and motor fuel tank. READY TO GO FOR $3970.00 tax paid. Also available at low extra cost: meters, fire extinguisher and L. P. carburetion. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Sterling 4916.

BUYING YOUR FIRST DELIVERY truck tank? Get the facts on Trinity's New Model #104 Twin 1400 WG capacity 250# WP complete with pump, printometer, hose, plumbing, etc., installed on new 1954 135 HP Chevrolet chassis—ready to haul gas today—$4,300.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

FOR SALE—1948 FORD F8, NEW MOTOR. 1000 x 20 tires, air brakes, 125 gallons gasoline saddletanks and two speed axle. Also, TRANSPORT, 3000 total WG capacity, 1000 x20 tires, air brakes, twin tanks. Both units in perfect condition. Cost price $10,000.00, will sell at sacrifice price of $2,500.00 for both units. Home Appliances, Inc., Lumberton, No. Carolina.

A COMPLETE PACKAGED UNIT READY TO USE

Brand new 1955 Chev. chassis and 1200 W.G. twin or single propane tank, piped complete with Viking KK-200 pump, PTO, shaft, 50' filler hose, lights, painted shiny aluminum over red oxide, FEDERAL TAX PAID, ONLY —

$3,647.00

(25% down, 24 months on balance)

WHITE RIVER DISTRIBUTORS, INC.
Batesville, Ark.
Phone 570

FOR SALE — TANKS - CYLINDERS

SPECIAL PURCHASE—USED 100 LB. ICC Propane cylinders, no valve. Foot ring off but furnished with cylinder. While they last $7.95 each. Also new cylinder valves, popular make. Special price, $2.24. All FOB Cleveland. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

FOR SALE — MISCELLANEOUS

FOR SALE — IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P.O. Box 396, Beloit, Wisconsin.

FOR SALE—CHEAP—FIVE (5) COLEMAN BLEND-AIR Furnaces for LP Gas—Used 3 months; bonnet connections, elbows, slip fittings, damper joints, recessed wall registers. Will sell at half price and deliver to Portland, Me. at no charge. Write or call Aroostook Gas Co., Inc., 46 Industrial Street, Presque Isle, Me.

DECALS MADE FOR TRUCKS, EQUIPment. Small or large quantities. Catalog free. Mathews Co., 827 S. Harvey, Oak Park, Ill.

FOR SALE: PIPE THREAD COMPOUND. Due to a special purchase we can supply you with a quality compound at a real savings. 25# pail only $6.25. 100# or more prepaid. Cash, no C.O.D. SOUTHWEST GAS EQUIPMENT, Liberal, Kansas.

SERVEL Gas Refrigerators

Used, in perfect operating condition, Clean, attractive, complete.

M400	4 cu. ft. at $20
R400A	4 cu. ft. at $23
R600A	6 cu. ft. at $28
S400A	4 cu. ft. at $30
BN600A	6 cu. ft. at $42

Wholesale Quantities Only
Low Delivery Cost Anywhere

Other models available. Send for illustrated folder NOW and be ready for your selling season.

BEACH REFRIGERATOR CO.
196-11 Northern Blvd., Flushing 58, N. Y.
Phone FLushing 7-6161

SELL MORE LPG APPLIANCES

Beat your electrical competition with the ingenious Competitive Cost Calculator. Simple and fast to use. Carry in your pocket and convince any prospect that LPG is cheaper. Shows in an instant the cost of cooking . . . water heating . . . or cooking, water heating, and refrigeration . . . by LPG and by electricity at your own local rates. Gives you the LPG cost by the pound and the gallon. Price only $1.00—discounts on quantities. Address

BUTANE-PROPANE News
198 S. Alvarado St.
Los Angeles 57, Calif.

WANTED — MISCELLANEOUS

WANTED TO BUY—SMALL PROPANE BULK TRUCK. Also bottle fill pump. Hawk's Gas, Atchison, Kansas.

WANTED: USED BUTANE OR PROPANE storage tanks 15,000 to 30,000 gallon capacity. State dimensions, W.P., age and location. Also propane transport wanted. Reply Box 640, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

PROFESSIONAL SERVICES

BUSINESS RECORD FORMS. ALL-WEATHER EZE-SNAP delivery invoices, for use when making LP gas metered truck deliveries. 1000 sets (3 part) imprinted with name, address and telephone. $17.50 per 1000 sets. DEGREE DAY SYSTEMS, WOODSIDE 77, L. I., N. Y.

CLIENTS OFTEN INCREASE PROFITS 2% or more by using my cost reducing bulk and bottle operating procedures and sales procedures. Property evaluations and special assignments also handled. Floyd F. Campbell, Management Counselor, 821 Crofton Ave., Webster Grove 19, Mo.

MAILING LISTS OF LPG DEALERS; Marketers and Jobbers; Fuel Oil Dealers, etc. Write: Oil Industry Mailing List Co., 405 Tuloma Bldg., Tulsa, Okla.

KRAFTBILT BUSINESS RECORDS INcrease your profits—improve your credit—help boost sales. That's why KRAFTBILT LP-Gas Forms are used by more LP-Gas dealers than any others. Simplify your office work—use KRAFTBILT simplified forms. Approved by your Asssociation. Highly recommended by outstanding LP-Gas suppliers. Don't wait! Send postcard now for LP-Gas Form Catalog. ROSS-MARTIN CO., P.O. Box 800-S, TULSA 1, OKLA.

LP-Gas Consultants

Call us before you buy or sell

Gas Service Corp.
13090 N. W. 7th Ave. Miami 50, Fla.
Phone MUrray 1-4638

INDIVIDUALLY DESIGNED Ammonia and LP Gas Plants

H. Emerson Thomas & Assoc., Inc.
Westfield, N. J.

L. P. GAS INSURANCE

Have your agent write us about our Complete and Comprehensive Coverage for Adequate Limits of Liability at Reasonable and Normal Rates with Specialized Safety Engineering and Claim Service. Available only in Alabama, Arkansas, Arizona, Georgia, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.

PAN AMERICAN FIRE & CASUALTY COMPANY
Earl W. Gammage, President
P.O. Box 1662 Houston, Texas

10 DAY TRIAL OFFER

Try the Martin Tube Bender on the job for 10 days. If you are not satisfied with its performance, return it to us and we will not bill you.

If you decide its the best bender you ever used and keep it longer than 10 days, we will bill you the regular price of $19.50 plus postage and insurance charges.



BEND TUBING EVENLY in close quarters with little effort

Dimensions: 9½ x 3½ x 3½ — weight 4½ lbs. Two sizes handle all jobs: #5 bends ⅜" and ½" o.d. soft tubing. #5A bends ½" and ⅝" o.d. soft tubing. Each without roll changes!

All bends are on 1¾" radius and are practically distortionless. Gear arrangement operated by rachet lever rolls the bend in the tube easily, makes bends in either direction by turning tool over and operating from other side. Sturdy — compact.

Write today for details on our free trial offer.

W. H. MARTIN Tube Benders
Box 692, Owensboro, Kentucky

YOU GET MORE POWER..... MORE MILEAGE



With An **ELLIS**
BU-POWER MANIFOLD

The ELLIS BU-POWER MANIFOLD holds vital expansion of fuel until it reaches the combustion chamber. By keeping cool, the Ellis Bu-Power Manifold packs power into performance . . . increases mileage and gives you far more satisfaction with LPG.

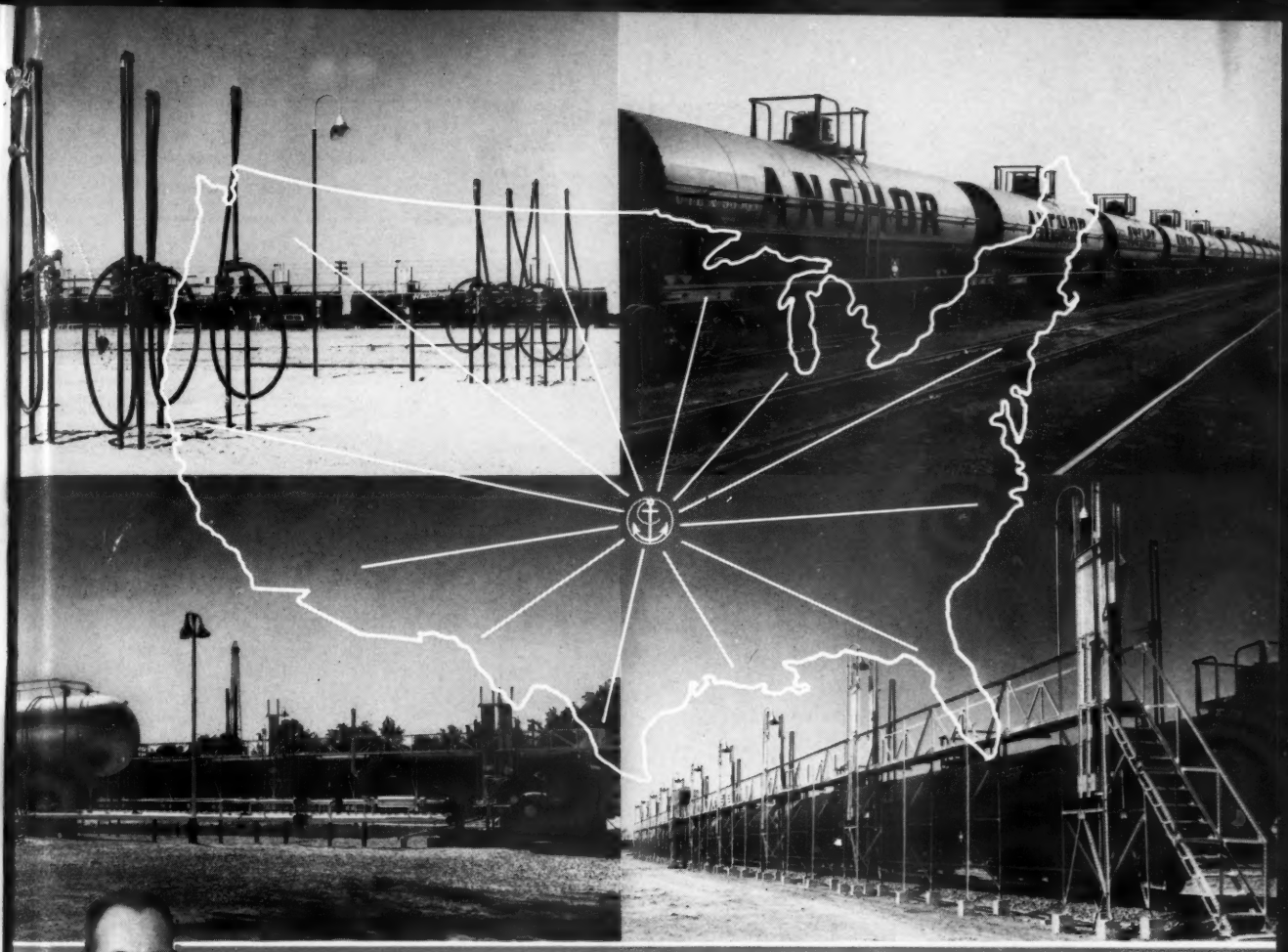
ELLIS MANIFOLD CO.
2212-A East Washington Blvd.
Los Angeles 21, California

In most cities, dial Information for the number of Ellis Manifold Distributor.

Advertisers

***These advertisers carry additional information on their products in the 1954 Butane-Propane Catalog.**

*ACF Industries, Inc.	109
Agricultural Equipment Co.	129
Aluminum Industries	—
*American Liquid Gas Corp.	—
American Metal Products Co. Inc.	140
*American Meter Co., Inc.	73
American Pipe & Steel Corp.	95
American RadiatorA & Standard Sanitary Corp.	—
*Sunbeam Air Conditioner Div.	—
*American Tank & Mfg. Co.	67
*Anchor Petroleum Co.	Third Cover
*Anco Mfg. & Supply Co.	3
Anetsberger Bros. Inc.	—
Anthony Co.	—
A-P Controls Corp.	—
Armco Drainage & Metal Prod., Inc. Div. Armco International Corp.	—
Armstrong Products Corp.	138
*Bagwell-General Steel Co.	112
Barber Gas Burner Co.	—
*Bastian-Blessing Co., The	76, 77
*Beacon Petroleum Co.	—
*Beaird Co., Inc., The J. B.	125, 126
Birmingham Stove & Range Co.	—
*Black, Sivalls & Bryson, Inc.	75
Brooks, P. W., & Co. Inc.	92
Bowser Inc.	—
*Brunner Mfg. Co.	92
Bryant Heater Div., Affiliated Gas Equipment Co., Inc.	22
Buckeye Incubator Co.	78
Burley Burner Co.	80
Butane-Propane Subscription Order	140
Butler Mfg. Co.	—
Calor Gas Co.	—
Caloric Appliance Corp.	14, 15
Carter Oil Co., The	118
*Century Gas Equipment Co.	150
Champion Bronze Powder & Paint Co.	—
*Charlotte Tank Corp.	—
*Chevrolet Motor Div., Gen. Motors Co.	71
Cities Service Oil Co.	59
Colo-Rite Mfg. Co.	78
Columbian Steel Tank Co.	—
Coleman Co., Inc.	8, 9
*Corken's, Inc.	124
Crane Co., The	133
Crane Packing Co., The	—
Crouse-Hinds Co.	—
Dallas Tank Co., Inc.	102
Dal-Worth Tank Co.	12, 13
Davis Engineering Corp.	—
Day & Night Div., Affiliated Gas Equipment Co., Inc.	—
Dearborn Stove Co.	120
Delta Tank Mfg. Co.	—
*Detroit-Michigan Stove Co.	99
Dixie Products, Inc.	—
Dixon Valve & Coupling Co.	—
*Downingtown Iron Works, Inc. Div. of Pressed Steel Tank Co.	114
Drake & Townsend, Inc.	94
Eisele & King, Libaire, Stout & Co.	98, 138
Ellis Manifold Co.	154
Empire Stove Co.	117
*Ensign Carburetor Co.	—
Ever-Tite Coupling Co. Inc.	—
Fairbanks, Morse & Co.	116
Filter-Soft Corp.	—
First Acceptance Corp.	134
*Fisher Governor Co.	103
*Flint Steel Corp.	—
Ford Motor Co.	123
Gas Appliance Mfg. Assn., Inc.	64
Gas Machinery Co.	131
General Controls Co.	—
General Gas Light Co.	55
Griffiths Co., The E. F.	136
Ginnell Co., Inc.	—
Gulf Oil Corp.	—
Handbook Butane-Propane Gases	135
Hannay & Son, Inc., Clifford B.	—
Hardwick Stove Co.	—
Harper-Wyman Co.	10, 11
Harrisburg Steel Corp.	—
Holly Mfg. Co.	—
Hunt Heater Corp.	—
Imperial Brass Mfg. Co.	—
International Harvester Co.	—
*Janitrol Heating & Air Cond. Div., Surface Combustion Corp.	—
*Johnson Gas Appliance Co.	—
Johnson Machine Shop	148
J & S Carburetor Co.	148
*Linde Air Products Co., Div. of Union Carbide & Carbon Corp.	83
Locke Stove Co.	110
*LPG Credit Corp.	89
Lubbock Machine & Supply Co.	53
Madden Brass Prod. Co.	—
Magic Chef	—
Manchester Welding & Fabricating Co.	—
Martin Stamping & Stove Co.	136
Martin Tube Benders, W. H.	154
*Master Tank & Welding Co.	61, 137
Marvel-Schebler Prod. Div.	151
McCabe-Powers Auto Body Co.	—
McNamar Boiler & Tank Co.	139
*Metalbestos Div., William Wallace Co.	101
Minneapolis-Honeywell Regulator Co.	16, 17
*Modine Mfg. Co.	—
Moellenbrock & Wilke	94
Motorola Communications & Electronics, Inc.	—
*Mutual Liquid Gas Equipment Co., Inc.	122
Natural Gas & Oil Resources Com.	—
Norman Products Co.	27
*Neptune Meter Co.	87
*North Texas Tank Co.	18, 19
Northwest Fabricators	132
Ohio Foundry & Mfg. Co.	—
Ohio Injector Co., The	—
Okadee Co.	—
Parkdale Co., The	149
*Pasley Mfg. & Dist. Co., The	108
Peerless Mfg. Corp.	—
*Philadelphia Valve Co.	—
Phillips & Buttorff Mfg. Co.	137
Phillips Petroleum Co.	97
Pittsburgh Equitable Meter Div., Rockwell Mfg. Co.	1
Powell Co., The William	28
Power Manifold Co.	186
*Pressed Steel Tank Co.	4, 5, Second Cover
Pure Oil Co., The	24
Quaker Manufacturing Co., Div. of Florence Stove Co.	119
*Ransome Co.	100
Radio Corp. of America	—
Rector Well Equipment Co.	136
Remington Rand, Inc.	121
Reo Motors, Inc.	144
Republic Heater Corp.	—
Rheem Mfg. Co.	—
Richardson Gasoline Co., Sid	51
Ridge Tool Co., The	96
*Robertshaw-Fulton Controls Co., Robertshaw Thermostat Div.	63
Rockwood Sprinkler Co.	69
Roper Corp., George D.	127
Roney Inc., Pump Div.	—
Royston Laboratories, Inc.	—
*Scaife Co.	81
*Selwyn-Pacific Co.	106, 107
Sheffield Bronze Paint Corp.	—
Sinclair Oil & Gas Co.	113
Skelly Oil Co.	—
Smith Corp., A. O., Permaglas Div.	57
*Smith Precision Products Co.	105
*Sprague Meter Co.	Fourth Cover
Squibb-Taylor Inc.	132
Star Mfg. Co.	79
Steel Cooperage Div., Serrick Corp.	—
Stewart-Warner Corp.	—
Stratoflex, Inc.	—
Tappan Stove Co., The	—
*Temco, Inc.	141
Texas Natural Gasoline Corp.	115
*Trageser Copper Works, Inc.	—
Trinity Steel Co., Inc.	6, 7
Tuloma Gas Products Co.	Front Cover
*United Petroleum Gas Co.	93
*United States Rubber Co.	—
Utility Appliance Corp.	111
Vicksburg Tank Co., Inc.	—
Viking Pump Co.	128
Waldorf Heater Co.	104, 130
*Warren Petroleum Corp.	20
*Weatherhead Co., The	85
Welbilt Stove Co.	—
Western Tank & Steel Corp.	146
Whitehead Mfg. Corp., D. W.	—
White Products Corp.	135
White River Distributors ,Inc.	—
Wiggins Oil Tool Co., Inc., E. B.	—
Wilcolator Co., The	—
Wood Co., John, Heater & Tank Div.	—
Zenith Carburetor Div., Bendix Aviation Corp.	—





HOW ANCHOR'S UNDERGROUND STORAGE, PLANTS and TANK CAR FLEET HELP YOUR BUSINESS . . .

We've talked a lot in these advertisements about Anchor's vast facilities. We show you our facilities to indicate that we can provide Anchorgas Butane and Propane at a competitive price with unequalled dependability of service.

UNDERGROUND STORAGE: Just how do you benefit through the vast underground storage installations Anchor has made at Hattiesburg, Bath, N. Y., and Midland, Texas? We can store gas during slack periods for use during high-load periods. This means that you can depend on an adequate supply, regardless of season.

MANY PLANTS: Anchor's many plants, all producing uniformly high-quality LPG, assure you of the most economical shipping distance . . . Also of an adequate and flexible supply.

HUGE FLEET OF TANK CARS: Anchor operates enough tank cars to meet schedules as promised. And, since these cars are normally in transit throughout the United States, it becomes simple for Anchor's traffic department to meet emergencies by re-directing cars already near the point of need.

Anchor's facilities help your business by assuring you of the gas you need at prices which are fair. You can't do better than that.

For the details on an Anchor Contract call Tulsa 2-7261.

ANCHOR PETROLEUM CO. TULSA

SALES OFFICES: Des Moines, Shreveport, Toledo, Houston, Los Angeles, Okla. City, Midland, Texas, San Francisco, Fresno, Seattle, Salt Lake City, E. Patterson, N. J. Hattiesburg, Miss., Macon, Ga., St. Paul, Minn.

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